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Section II: Medicine.

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Atypical Neuralgia of the Face.

Dr. L. B. Cox (Melbourne) read a paper dealing with certain atypical neuralgias of the face. He referred to Frazier's classification of neuralgias of the face into: (i) neuralgias due to infections of the teeth and sinuses, subsiding after the regression of the inflammation; (ii) post-herpetic neuralgias; (iii) neuralgias due to tumours of the Gasserian ganglion; (iv) painful phenomena of the face associated with migraine; (v) major trigeminal neuralgia; atypical neuralgia. It was with the last group that he proposed to deal.

Dr. Cox divided atypical neuralgia into two categories: (i) those neuralgias of the face that persisted after destruction of the fifth nerve; (ii) atypical neuralgias, not commonly recognized as of fifth nerve origin, which were relieved by destruction of the fifth nerve. The first of these included neuralgia associated with migraine, neuralgias that were mainly facial, and cervico-facial neuralgia. In regard to migrainous neuralgia, Dr. Cox emphasized three points: (i) It was by far the commonest type of atypical facial neuralgia. (ii) After shock or following emotional or mental stress intermittent attacks might become almost continuous. (iii) It might be indistinguishable from the condition known as Sluder's

neuralgia. Dr. Cox believed that most of the cases reported as Sluder's neuralgia were manifestations of migraine.

In dealing with the neuralgias which were mainly facial, Dr. Cox devoted some time to a discussion of the sensation of facial pain. He discussed the divergent views as to the survival of deep pressure facial pain. In some instances he had been able on deep pressure over the anæsthetic area to produce pain; in others he had not been able to do this. The rôle of the facial nerve was difficult to determine; he quoted observations of his own to show that the facial nerve might be a mediator of painful impulse, and also an observation to show that it was not the sole mediator. There was no evidence of which Dr. Cox knew to support the view that the cervical nerves might be associated with atypical facial neuralgia, but he said that the possibility required investigation. He also discussed the possibility of some of these neuralgias being of central origin.

The cervico-facial neuralgias had to be distinguished clearly from the radiation into the cervical nerve area that might occur as an overflow in neuralgia of the ophthalmic division of the fifth nerve. Dr. Cox referred to patients suffering from this type of neuralgia and said that it was tempting to surmise that they suffered from a "central neuritis", some condition that might have rendered unduly sensitive both upper cervical segments as well as the descending root of the fifth nerve.

Dr. H. F. MAUDSLEY (Melbourne) said that Dr. Cox, with his characteristic scientific outlook, had drawn a gloomy picture of the treatment of atypical neuralgias and was sure that he must have had successes as well as the failures he had described. Dr. Cox had not spoken much of cases in which there was a psychological element. He had recently had a case of atypical neuralgia in a woman who was apparently a non-neurotic, a solid country woman who had brought up a large family and played an important part in the life of the town where she lived. On investigation it was found that there was a big psychological problem preventing her from enjoying her life. When this was solved her pain disappeared. He would like to ask Dr. Cox's opinion on a patient with suprasellar tumour, which was diagnosed by examination of the visual fields and by X rays and confirmed by operation. For several weeks before operation this patient had had acute pain so typically neuralgic that it had been considered probable that it was caused by a septic tooth until the diagnosis of tumour was confirmed.

PROFESSOR CARMALT JONES (Dunedin) said that Dr. Cox had mentioned a point that interested him, in describing the conduction of pain by fibres from the fifth nerve travelling along the facial. He recalled the case of a boy who, after sleeping under an open window, developed an ordinary Bell's palsy accompanied by pain in the affected side of the face. He was found to be partly analgesic over the distribution of the fifth nerve. Both sensory and motor symptoms subsequently cleared up. Another patient, an adult, with chronic Bell's palsy, had had definite diminution of sensation over the distribution of the fifth nerve. These two cases suggested that in an ordinary Bell's palsy there could be such a temporary increase in pressure as to give a recognizable anaesthesia.

Dr. Cox, in reply to Dr. Maudsley, said that one did have successes, but these were usually of the type that were definitely paroxysmal and relieved by "Luminal". The failures were the cases from which most was learned. A full psychological examination had eliminated a psychogenic element in each case he had described. He had purposely excluded cases with a psychogenic element. He was interested to hear of Dr. Maudsley's case of suprapituitary tumour. At the Alfred Hospital they had had 150 such cases in which the diagnosis had been confirmed by biopsy, and in many of these there had been pain. It was difficult to explain the cause of this pain. The sensory root of the fifth nerve had been found to be considerably stretched by a tumour in a case in which the patient had felt no pain. It was probable that pain was caused only when the nucleus of the nerve was subjected to pressure. He recalled a rare case, that of a cholesteatoma of the cerebello-pontine angle. This patient had had severe pain some years before. The tumour was successfully removed. He was very interested in Professor Carmalt Jones's account of hypoaesthesia accompanying seventh nerve palsy. He had made no observations of that sort. Some patients with Bell's palsy complained of pain preceding the paralysis. The usually given explanation of seventh nerve palsy after operation on the Gasserian ganglion was that the petrosal nerve was pulled on or interfered with in some way. Observers in other parts of the world had not described such sensory phenomena in Bell's palsy.

Rheumatoid Arthritis.

Dr. J. KEMPSON MADDOX (Sydney) read a paper entitled: "Classification and Treatment of Rheumatoid Arthritis." He referred first of all to part of the classification adopted by Glover in 1930. Glover's Group C was divided into: rheumatoid arthritis, osteoarthritis, gout and unclassified cases of chronic joint change. He thought that Glover's classification would be wholly replaced by the classification suggested by the British Medical Association Arthritis Committee. This committee divided rheumatoid arthritis into chronic polyarthritis, which was primary (acute, sub-acute and chronic), and atrophic or proliferative, which was secondary (acute and subacute). Dr. Maddox thought that, in view of the growing conviction of the unity of

rheumatic diseases and of the great variety of aetiological agents producing the same clinical picture, it would be many years before a generally acceptable grouping, based on causation, would be evolved and the label rheumatoid cast out. Dr. Maddox enumerated the points of relationship between acute rheumatism and rheumatoid arthritis and said that his own conception was that all disorders qualifying for the label rheumatic shaded into one another. At one end of the scale was chronic rheumatoid arthritis affecting chiefly the joints, and at the other was acute rheumatism affecting chiefly the heart—these occurred in individuals so predisposed by reasons of a constitutional and perhaps allergic tendency. The underlying difference was chiefly bacteriological. He defined rheumatoid arthritis, therefore, as a polyarthritis affecting at first symmetrical joints of the fingers, which underwent peri-articular swelling with increasing stiffness and disability, the condition spreading ultimately to ankle, elbow and knee, and ending in contractures, subluxation or ankylosis by bony or fibrous union.

Dr. Maddox then discussed the differences between primary and secondary rheumatoid arthritis. He pointed out that in the primary form focal infections were absent or insignificant and that in the secondary form an appreciable, often obvious, focus of infection could be found. The distinction between the two forms was rather fine, but the treatment in each was almost the same and naturally included search for and eradication of gross sepsis. The chief distinction lay in the prognosis, which favoured the secondary variety.

Discussing prophylaxis, Dr. Maddox said that the two factors to be prevented were endocrinal exhaustion and the establishment of focal infection. The "soil" was as important as the "seed". In the past too much attention had been paid to the seed and not enough to the soil. The problem was largely sociological and concerned with industrial hygiene, suitable choice of occupation, anti-fatigue training and so forth. In potential rheumatoid arthritis the family physician had a very definite responsibility.

Dr. Maddox discussed treatment according to three stages of the condition. In the course of his remarks he referred to physical therapy and orthopaedic measures. At the same time he insisted that from first to last rheumatoid arthritis was a medical condition; and the physician should be prepared to direct and even to undertake certain technical massage, electrotherapeutic and surgical procedures. In conclusion, Dr. Maddox referred to what he called the world war against rheumatism. He said that Australia was late in the field. The incidence and distribution of rheumatism in Australia were unknown. There was in the Commonwealth no modern anti-rheumatic machinery, nor was there any medical organization of spa therapy. He thought that the Section should ask for the formation of a committee of inquiry to be established in Australia, and he suggested that at the next session of Congress a plenary session should be devoted to the subject.

Dr. K. HULLER (Melbourne) said he had listened with pleasure to Dr. Maddox's address. Rheumatoid arthritis and polyarthritis were becoming more prevalent and more crippling. He thought the second part of Dr. Maddox's address was most important for the future. He noticed that in the classification of arthritis a menopausal type was mentioned. He would prefer not to make a separate type of arthritis which happened to occur at this time. He referred to the insidious onset of some cases. Investigation of early cases would help a great deal. Fibrositis, fibromyositis and so on probably were in the same category as rheumatoid arthritis, and these diseases were responsible for much loss of time to the community. Much might be learned if medical men would pool their experiences as to the efficacy of various treatments. Each patient must be treated as an individual, and a cheerful and optimistic attitude on the part of the medical practitioner was very necessary. Personally he did not limit the diet in these cases in any way except in cases of extreme obesity. He had found that benefit was derived from large doses of tincture of iodine, up to one drachm three times a day. He thought the use of vaccine had a place.

DR. E. A. ELLIOTT (Hobart) endorsed Dr. Hiller's remarks about the tolerance of large quantities of iodine shown by these patients. One of his patients had been given a mixture containing iodine and had taken one tablespoonful three times a day instead of a teaspoonful. She returned in four days' time, having consumed three weeks' supply of iodine and felt remarkably well. He invariably used iodine in these cases.

DR. E. BRITTON JONES (Adelaide) wished to emphasize the importance of the pre-rheumatic stage. There were many people in the community who suffered from vague pains and general ill health and who were found to have a secondary anaemia and occasionally tachycardia. These patients were candidates for rheumatoid arthritis, and this was the most hopeful stage for treatment. This type of patient was, of course, a candidate for various other diseases, and in particular might develop the effort syndrome or be pre-tuberculous. They should not be looked on as neurotics, but carefully investigated and treated.

DR. BICKERTON BLACKBURN (Sydney) said that he had always been interested in the question of arthritis. The most important thing was to treat each patient as a patient and not in any standard way. As Dr. Maddox pointed out, a period in hospital for complete investigation was very important. It was probable that the elaborate system that kept joints, cartilages and so on in perfect repair might be deranged by a variety of causes, and the disturbance, once initiated, might continue when the cause ceased to be active. This was instanced by the joint conditions which sometimes followed serum sickness and which continued to progress when the exciting cause had long since ceased to act. His own experience of drug therapy was rather unsatisfactory. He agreed that it was extraordinary how much iodine these patients would tolerate. Some time ago he had had some investigations carried out on the intake and output of iodine in thyrotoxic patients who were being treated by this drug. Biochemical investigations showed that in these patients the output of iodine was slightly greater than the intake. It was, however, undoubted that some thyrotoxic patients were benefited by the iodine, which apparently did not become absorbed. It was possible that patients with rheumatoid arthritis were also benefited by what might be described as a flushing of the system with iodine. He approved of Dr. Maddox's suggestion that the matter of rheumatoid arthritis should be fully discussed at a subsequent congress.

DR. JEAN MACNAMARA (Melbourne) said that Dr. Maddox had spoken of the growing appreciation in other countries of the economic wastage resulting from chronic non-specific arthritis. In the United States of America and Canada the aspects of aetiology and care were receiving widespread attention. It was probable that the name atrophic arthritis in America and its synonym rheumatoid arthritis in Great Britain were being applied to conditions arising from more than one cause. However, even though the aetiology was undecided, though therapy was empirical, a great deal could be done to protect the potential cripples from rheumatoid arthritis from permanent crippling due to deformity.

As Dr. Maddox had stated, the disease was often "self-limited"—"the fire burned itself out"—but the patient was left handicapped by architectural defects.

While the limitation of joint movement was due to the disease process, the deformities that occurred could not fairly be attributed to the disease, but to the action of circumstances acting while the process was active. Such deformities as flexion of the metacarpophalangeal articulations, ulnar deviation of the finger, adduction of the thumb, flexion of the wrist, pronation of the forearm, adduction of the shoulder, flexion of the hips and knees could not be attributed to the arthritis *per se* any more than the same deformities occurring in neglected poliomyelitis could be attributed to the virus of that disease. In both conditions the deformities were determined by the positions habitually assumed. If, for example, they considered a patient with acute arthritis who was kept

in bed, they would remember that it was almost a routine with nurses to place a pillow under the patient's knees; this favoured the development of hip flexion by the contraction of the hip flexor muscles and the ham strings. Because it was more comfortable and warmer, the shoulders were kept adducted, the forearm pronated, and the wrist flexed.

It had been Dr. Macnamara's privilege in Boston to study the methods of Dr. Loring Swaim, the leader of the clinical work on arthritis in America. While appreciating that each patient was a sick person whose general condition had to be improved by every means available, including mental rest and good food, Dr. Swaim had brought to the problem the technique of conservative orthopaedics. He appreciated that if a wrist joint was to become ankylosed, the patient would be much better off if ankylosis occurred in the position of dorsiflexion; that if the radio-ulnar articulation was to become ankylosed, the patient's ultimate independence would be greater if the position of the right forearm was supination rather than pronation; that, to women especially, enough abduction of the shoulder to enable care of the hair to be undertaken was a real advantage. The development of adduction contraction of the shoulder was as unnecessary in arthritis as in poliomyelitis. The results obtained by Dr. Swaim had fully justified the trouble taken to hold each joint in the position of optimum function.

Dr. Swaim had brought to this work appreciation of Goldthwait's work on body mechanics, and his patients were protected from the faulty posture that followed prolonged sitting—stretching of the abdominal muscles, ptosis of the viscera and reduced chest expansion. Special care was taken of the feet while the patient was in bed and during the first months of learning to walk. Plates made to a plaster cast of the feet held the arch in a good position.

In considering that group of cases in which fever occurred intermittently, it was well to remember the lesson of the veterinarians, that in swine and cows *Brucella* tended to affect bones and joints, inducing spondylitis and arthritis. That *Brucella* might play some part in the aetiology of chronic arthritis had only recently been realized. As the opportunities were great in Australia, Dr. Macnamara suggested that the serum of patients with arthritis, especially those with intermittent fever, should be tested against the antigen of *Brucella*. Many years previously it had been realized that the caprine strain of this organism induced the arthritis occasionally following Malta fever.

Dr. J. K. Maddox expressed his gratification at the support of his suggestion. He moved:

That the Federal Council should consider the advisability of a full and comprehensive inquiry into rheumatism in Australia similar to inquiries that have been conducted in other countries, and also that the subject of rheumatoid arthritis should be fully discussed at the next Congress.

The motion was seconded by Dr. Jean Macnamara and carried.

Stammering.

DR. T. GARNET LEARY (Melbourne) read a paper entitled: "The Tragedy of Stammering and Its Analogies in Sport." He said that he wished to show that stammering was essentially a mental or psychic disorder, to find in certain actions in games some parallel to the stammer of speech, and to suggest the general nature of remedial measures. Stammering was a cortical speech defect, and probably concerned the supragranular layer of the cortex. Stammering differed from other cortical speech defects. Most stammerers could speak perfectly when they were alone. There was obviously some pathological maladjustment to environment. The core of the condition was fear, and the whole problem of treatment centred round the dissolution of the fear complex.

Turning to the analogies to the stammer of speech, Dr. Leary said that a stammer might occur on the parade

ground—there was a momentary dread that one might halt and be unable to go on. The psychosis of fear in these circumstances was of precisely the kind that lay behind stammering. Dr. Leary mentioned other actions in which similar disturbances might occur, such as playing music from ear, swinging a golf club, or even in setting a penny spinning on the table.

In treatment one great need was an easy rhythmic manner with relaxation, whether in speech, in sport or in competitive games. A feeling of ease in contradistinction to strain and muscular rigidity had to be cultivated. An atmosphere of sympathy and encouragement also had to be created.

PROFESSOR HARVEY SUTTON (Sydney) congratulated Dr. Leary on his mastery of his subject. It was an example of the singular success sometimes achieved by a medical man who suffered from a malady he had conquered. Stammering was a problem that affected a fair number of members of the medical profession, if he might judge from the students who passed through his hands. During the ten years in which he had been teaching public health and preventive medicine he had found that every now and then a stammerer passed through his hands; in fact, that one out of every forty students was affected in this way. Very little was done for these young men. Occasionally they attended elocution classes. On the records kept by Dr. Willis it had been found that one out of every forty school boys in New South Wales was a stammerer. He thought that some organization was necessary to carry out the ideas which Dr. Leary had formulated. Some attempt was being made to organize a clinic at Saint Bartholomew's Hospital, London. Dr. Machin, Principal Medical Officer in the Education Department in New South Wales, was at the moment organizing a school for stammerers. When one reflected that of 1,300,000 school children 600,000 were boys, and of those one in forty was a stammerer, it appeared that there was quite an army of stammerers in the community. This meant an interference with the development of their personality and their future prospects.

In his opinion, the left-hander did more easily become ambidextrous; one could pick out a left-hander by dynamometer tests. In right-handed persons it was usual to find that the right hand registered 60 and the left hand 40, whereas in left-handed persons both hands balanced. As to the effect of ambidexterity, there were very few facts in support of Dr. Leary's theory. An Inspector of technical work in the Education Department told him that when he was working in London some years ago the idea arose to teach children to be ambidextrous. When they were doing wood-work it was customary to ring a bell every half hour, whereupon the children changed hands. If a boy, for instance, were hammering with his right hand, he was instructed to put the hammer into his left. After a little while the people teaching languages in the schools objected, as they were having trouble with the correct speech of the children. Perhaps ambidexterity might be taught at a later age. There seemed to be some doubt as to whether left-handedness was common in stammerers. He pointed out one fallacy in some estimates that had been cited at a science congress in Sydney. Out of forty stammerers, only four were left-handers. It was deduced from this that stammering was not common among left-handers. This, of course, was a wrong deduction. He himself would expect to find three stammerers in one hundred normal children, and twenty to thirty stammerers in one hundred left-handers. He thought that the genesis of the whole matter belonged to pre-school life. School teachers said that stammering was due to a failure to make one's thoughts clear. This was doubtful. Others said that the best way was to impose a period of silence and then to start the child learning his own language over again.

DR. S. V. SEWELL (Melbourne) said that he could vouch for what Dr. Leary said about his own stammering, as he had been the first doctor whom Dr. Leary interviewed about his difficulty. He was filled with admiration for the amount of work Dr. Leary had put into his own

case and for the tremendous amount of self-sacrificing work he had done for other people. He entirely agreed with Dr. Sutton about the pre-school age. He thought, of course, that immediately the children went to school the excitement of a new environment and the mimicry of other children tended to enhance the difficulty. Very often such a child was unsatisfactorily handled by the teacher, and thus various causes produced a most unhappy state of mind.

He thought that many left-handers were stammerers. He remembered a boy who was left-handed and who at school was encouraged to bat and bowl left-handed, but who was made to use his right hand for everything else. At the end of four years at school his stammering was so marked that he avoided his fellows, except in the playing fields. He hoped that Dr. Leary's work would receive full recognition and full appreciation. He himself had not seen a single failure among stammerers handled by Dr. Leary.

DR. J. H. BEAUMONT (Wellington) asked Dr. Leary whether stammerers often suffered from squint. One of the boys shown at the meeting had a squint. Squint developed in the pre-school age. His personal opinion was that it was an affection similar to but not related to stammering.

PROFESSOR W. A. OSBORNE (Melbourne) said he had not studied the subject of stammering, but he would like rather diffidently to bring forward one observation, namely, the inordinate speed with which stammerers spoke when they did speak. Had Dr. Leary tried the effect of slow speech without rhythm? When he was in Germany as a young man he had spoken the language very badly, in spite of a fair knowledge of the vocabulary and grammar. A person under whom he worked brought out a metronome and made him speak slowly, keeping time with this. In this way he learnt to speak German with some fluency. He must enter one mild protest about ambidexterity. In any occupation where the two hands had separate tasks it was surely folly to teach one hand the other's work. For instance, if one made a violinist ambidextrous, one was providing two mechanisms where one was enough.

Dr. Leary, in reply, thanked the meeting for the discussion. He thought that many salient points had been brought forward. He was eager to learn from criticism of his work. He thanked Professor Harvey Sutton for the figures he had quoted. He would be very happy to help in any organization for the relief of stammerers. In reply to Professor Osborne, he said that he had often tried to slow his own speech, and said that a stammerer coming out of an anaesthetic spoke slowly and quietly. He thought, however, that relaxation with rhythm was the keynote. In this way one could cure stammering definitely and positively if the patient were in the kindergarten stage. Later than this stammering was not cured, but only corrected. He had brought forward the subject of ambidexterity in order to get some expression of opinion. He thought that research would be useful, but had merely touched on a subject about which he knew nothing.

Epilepsy.

DR. R. P. McMEekin read a paper on epilepsy. This paper has not been made available to THE MEDICAL JOURNAL OF AUSTRALIA.

Muscle Tone.

DR. N. D. ROYLE (Sydney) read a paper entitled "The Source of Muscle Tone". He said that Sherrington divided muscle tone into two elements: (1) elastic contraction or contractile tone, (2) plastic contraction or plastic tone. The latter subserved lengthening and shortening reactions and maintained the posture imposed by the elastic contraction. These two elements of tone appeared in the extensor muscles of decerebrate animals often immediately after transection of the brain stem in the regions of the upper colliculus. The two elements of tone also appeared in

intact animals into which a large dose of adrenaline or ephedrine had been injected. These drugs were essentially vaso-constrictors and raised the blood pressure, and it was possible that the great vaso-constriction and consequent depletion of blood supply caused a hyperactivity of some pre-spinal centre, thus leading to contraction of the extensor muscles. Normal vaso-constriction was due to the activity of the vaso-motor nucleus in the medulla. In decerebrate animals the vaso-motor nucleus was uncontrolled and was responsible for the vaso-constriction of the remaining brain stem and spinal cord. In the limbs of spastic patients exhibiting lengthening and shortening reactions and abnormal reflex activity there was a great increase in blood pressure. This was not due to a generalized hyperpiesia. High diastolic pressure was permanently lowered in the contralateral limb following a thoracic trunk section in which the superior thoracic ganglion and its connexions were removed. This must be due to the ipsilateral increase of circulation around the vaso-motor nucleus. There was also a contralateral decrease in the manifestation of both the elastic and plastic elements of muscle tone. Dr. Royle gave details of an experiment on a goat showing the influence of the vaso-motor centres of the spinal cord.

Dr. Royle went on to say that the explanation for the loss of plastic spinal tone following sympathetic ramisection was that the operation led to a permanent dilatation of ipsilateral spinal vessels and so to a decrease in spinal reflex activity; it did not, however, lead to a loss of elastic contraction or contractile tone, as shown in the contraction of the extensor muscle. The operation of thoracic sympathetic trunk section reduced the activity of the vaso-motor nucleus to normal by increasing the circulation and so led to a lessening of elastic or contractile tone. The failure to distinguish between elastic contraction and plastic contraction had led to erroneous conclusions of critics who had dealt with his work. Elastic contraction in a frightened child could mask the loss of plastic tone by causing a continuous extension, and so the result of the division of sympathetic nerves was not observed, particularly when the patient had not been seen before operation as well as subsequent to operation.

PROFESSOR W. A. OSBORNE (Melbourne) said that he had been profoundly interested in Dr. Royle's paper. Dr. Royle had shifted the scene of operation from the periphery to the centre. He required a little time to let the new idea sink in. Dr. Royle had broken new ground and he would prefer to review it dispassionately later. On first sight it might seem far fetched. He would like to ask one question. Did Dr. Royle state that the blood pressure was different in one limb from what it was in the other, and if so, what was the explanation?

Dr. Royle stated he had merely recorded an observation made. He had found that the diastolic pressure was different in the right limb from what it was in the left limb.

DR. MARY DE GARIS (Geelong) asked whether the contraction and retraction of the uterus might be

compared to the difference in muscle tone described by Dr. Royle. She had been searching for modern work on the state of the uterine muscle and had found that very little seemed to be known about the matter.

Professor Osborne asked whether the muscular contraction obtained with small doses of nicotine in some animals was due to excitement of the sympathetic nerve system.

Dr. Royle said that the effect mentioned by Professor Osborne would be due to stimulation of the vaso-motor nucleus. He also said that he would like to take this opportunity of saying that the Royal Australasian College of Surgeons had criticized his work, but that the operation for which he had been criticized had been given up four and a half years ago. He thought that the new operation of sympathetic trunk section in the neck was superior to ipsilateral sympathetic ramisection.

Euthanasia.

DR. F. GUY GRIFFITHS (Sydney) read a paper entitled "Euthanasia". He said that physicians knew how little pain was usually associated with the act of dying. Yet there were some cases in which death was long drawn and painful. In most of these human aid was available to give relief by the administration of morphine or chloroform. Although a prolonged death agony was a reproach to the medical attendant, no possible occasion should be offered for the accusation of having put any patient, however miserable, out of his misery. When the severity of the illness or the particular circumstances of the patient made it impossible to relieve his agony by drugs, other considerations arose.

The claim to euthanasia, the right to take one's own life when it was useless or painful, although at present denied by British law, had been previously recognized. The Stoics held it firmly; it had been asserted by Sir Thomas Moore and had been eloquently argued by "Charles Edgbaston" in a play produced in Sydney. If it were admitted that there were occasions when an artificial happy release was permissible, it remained to discuss the method. The first requirement was an alteration in the law. The existing state of public opinion suggested that this should not be difficult. It should be provided that, only on the decision of a magistrate after due inquiry and any objections heard, should the happy release be permitted—the magistrate's order would be permissive and not mandatory. Poverty, disgrace, crime or madness should not be grounds. Only in the case of a patient in great suffering from an incurable disease so that he desired death, should permission be given. If the magistrate were quite satisfied, his permission should be granted to the patient himself or to a next of kin agreeable to undertake the sad duty, or in the last event a State official. In no circumstances should a medical practitioner be required to perform the office. Any lapse from the medical man's duty to save life would tend to undermine the confidence with which the majority of the public placed themselves in the hands of their doctors.

Section III: Naval, Military, Air Force Medicine and Surgery.

Organization of the National Medical Service for War.

COLONEL F. A. MAGUIRE (Sydney), in his presidential address, discussed the organization of a national medical service for war. He said that the Great War had taught them that in war the whole nation must be organized as one striking force. In Australia there were only about five thousand five hundred medical practitioners. If Australia sent an expeditionary force abroad in conjunction with the Mother Country, special arrangements were made. It would be different if war came to Australia, and for this Colonel Maguire had drawn up

a plan of national medical organization. A properly organized medical service would be in close liaison with the civilian medical services, which should be as well organized as those of the defence forces.

Under the cabinet the nation was organized on the defence side under a war council and should be organized from the civilian side by a council for national service. The medical services should be organized on similar lines. Attached to the cabinet there should be a commissioner for national medical services. Attached to the war council would be the director-general of defence medical

services. At the headquarters of each arm of the service would be a director of medical services. These branches of the service would be the navy, the army, the air force and the auxiliary services (red cross and voluntary aid detachment). Attached to the national service council would be a controller of civil medical services. Under the controller of civil medical services would be the quarantine and public health service, civil practitioners and hospital staffs. Colonel Maguire elaborated this scheme. He said that the principles he had enunciated applied to all aspects of national life. He added that the medical profession, well educated, well organized and imbued with the spirit of unselfish service, should give a lead and urge on the Federal Government the necessity for formulating a workable scheme.

GENERAL G. W. BARBER stated that he was in cordial agreement with the scheme propounded by Colonel Maguire. The Royal Commission on Health of 1925, in its recommendations, stated that the medical services of the army, navy and air should be coordinated. In 1929, as Director of Medical Services, he took over the Air Force Medical Service, and so partly coordinated these services. Later the medical services of civil aviation were attached to his department. He considered that the medical services of the Civil Aviation Department should be coordinated with the general defence medical service.

As regards the naval medical service, this matter of coordination had come up in 1929, and the medical officers of the navy at that time were opposed to it. Two years later they were wholly in favour of it. Then, however, the Admiralty was opposed to it. General Barber thought, however, that his successor would be able to achieve this coordination.

A certain amount had been done in regard to the National Medical Service Council; the Administrator, the Director-General of Health of the Commonwealth, and himself had met and defined a policy. A committee was then constituted, of which he was a member, and certain modes of action were laid down. Unfortunately only one meeting of this committee had been held before the financial depression came. He had no doubt that when the committee met again something definite would be done. He would be pleased to send a copy of Colonel Maguire's paper to the Ministry.

GENERAL A. T. WHITE said that Colonel Maguire had given an excellent paper and had pointed out difficulties likely to be encountered. He, himself, found it difficult to get medical practitioners to join the Army Medical Corps Reserve. When he arrived in Australia in 1888 none of the regiments had a medical officer attached. It was not thought necessary to have regimental medical officers.

His experience in France was that many doctors knew nothing of army routine. To avoid this doctors should be urged to join the Army Medical Corps Reserve and there learn the routine of the medical machine in war.

The plan of Colonel Maguire was very complete. Colonel Maguire had been one of his, General White's, officers in France, and had shown himself to be an excellent administrator and strict disciplinarian.

COLONEL W. L. KIRKWOOD said he spoke with diffidence, but only for the sake of emphasizing the necessity of training civil practitioners in things military. Even the individual regimental officer had a position of authority and command which was often overlooked. He considered that every army medical officer should have several weeks' training a year in military routine. It had been a long fight to get the army medical services recognized as part of the military machine.

Colonel F. A. Maguire, in reply, stated that the active list in every State at present was complete as far as officers were concerned. Many of the Australian Imperial Force officers had died, or were very senior. He had, however, kept up the interests of students in the army medical services, and 50% of the resident medical officers of the Royal Prince Alfred Hospital in Sydney were on the active

list. If necessary a full war quota of Army Medical Corps officers, all reasonably well trained, could be put into the field within twenty-four hours.

Present Training Methods.

LIEUTENANT-COLONEL S. G. GIBSON (Hobart) read a paper on present training methods. He said that training of the Australian Army Medical Corps was carried out in accordance with principles laid down by the Military Board. The time allowed for such training was most important. A unit could not be expected to be trained for war in one year's training of twelve days. It was even doubtful if a unit could be classed as efficient for war in a number of years when the total amount of training was less than a month. The best that could be done in such circumstances was to maintain a definite Australian Army Medical Corps field of activity and be self-contained, to carry out as much of the technical training as possible and to disregard general training except to the extent of that which would assist in carrying out this technical training.

Physical training was provided for ambulances, but the question arose whether this period could not be better devoted to some other aspect of training of more military value. To be effective physical training must be continuous. The training of officers of the Australian Army Medical Corps was a difficult problem. Colonel Gibson thought that some system might be instituted whereby these men could receive military training at the various universities they were attending and be examined in military subjects for the rank of captain. He also thought that selected personnel of the nursing section of ambulances should be given an opportunity of receiving practical training in a general or other hospital. More consideration should be given to members of the Australian Army Medical Corps in the matter of recognition of efficiency. Skill-at-arms badges were provided for most of the units; why not for the Australian Army Medical Corps also? Finally, Colonel Gibson thought that cadets attached to Australian Army Medical Corps units might be made to serve a very useful purpose in allowing them to attend camps where they could be employed in such capacities as batmen, mess orderlies, runners *et cetera*; a corresponding number of militia would thereby be relieved for general training purposes.

GENERAL G. W. BARBER, in congratulating Colonel Gibson, said he would like to point out that the people responsible for all army training was the "G" staff, the Director-General of Medical Services collaborating with this staff. He would like to state that very shortly the assistant directors of medical services would be restored to the establishment of the Army Medical Corps. Physical training was a very important matter, but unfortunately very little could be done owing to the small amount of time allowed for training. As regards officers, his experience was that the best of them had been non-commissioned officers in a university regiment.

COLONEL GARNET LEARY stated that he was of the opinion that it would be advantageous if a card index system could be arranged so as to give a brief history of every man joining the battalion.

The care of the feet was a very important matter in training, and the men should be lectured on this subject. Men should not be allowed to wear cotton socks whilst training. Boots of men going into camp should be inspected to see that they were suitable.

So as to keep the men fit, sports, such as football, should be arranged between different battalions.

COLONEL F. A. MAGUIRE (Sydney) said that in regard to the training of medical officers he had advised medical students to join the university regiment, which was really an officers' training corps. Such a training made them more efficient when they joined the Army Medical Corps.

The question of gas respirators was, of course, an economic one; he thought it would be a good idea to have cadets attached to the Army Medical Corps.

Selection and Supervision of the Fit.

LIEUTENANT-COLONEL T. GARNET LEARY (Melbourne) read a paper on the necessity for careful selection and subsequent supervision of "the fit" for national and military service. He dealt first with the selection of the fit for military training. Every unfit man in a military unit entailed one or more of the following: (i) constant medical attention, (ii) treatment or evacuation for treatment, (iii) discharge and treatment, (iv) discharge, treatment and pension. This threw an undue strain on the medical service, the hospital accommodation and the monetary resources of the nation, besides causing weakening and inconvenience in the fighting unit. From a national economic point of view the percentage of "unfits" in a nation meant an added burden upon the finances of the nation.

In peace times constant medical supervision was essential, for the classification of fitness could not be carried out at the last moment. To develop a national conscience and pride in fitness it should be the national aim (i) to examine and classify all youths between thirteen and fourteen years of age; (ii) to teach all youths physical training, hygiene and simple rules to preserve health; (iii) to give necessary corrective training to those who were unfit, but who, by training, were likely to become fit; (iv) to examine all youths periodically up till twenty-one years of age.

Apart from defence, some form of training would provide an interest for many young men now unemployed or unemployable. It would promote smartness, efficiency, usefulness and loyalty, with discipline as the keynote in national pride; and, further, in adolescence it would foster and stimulate the spirit of protection and preservation of everything that was useful, interesting and of historic value in national life.

GENERAL G. W. BARBER congratulated Colonel Leary on his paper. The adoption of his suggestions was really a national necessity. During the Great War ten thousand men had been sent away unfit and had to be returned without seeing any active service. As it cost about £400 to tranship each of these persons to the other side of the world, it would be seen that four million pounds was actually wasted.

COLONEL W. L. KIRKWOOD congratulated Colonel Leary on his paper. His observation had led him to the view that some men who had not been accepted for active service on account of not being able to conform to the required physical standard, had since degenerated.

The King's Colours.

GENERAL G. W. BARBER, Director-General of Medical Services, gave a short address on the history of the King's Colours presented to the Australian Army Medical Corps by the direction of His Majesty the King in 1904. He said that the King's Colours were consecrated and presented at a Royal review in Melbourne on November 14, 1904, and in recognition of the number of medical personnel from New South Wales who served in the South African War prior to Federation. An Australian Army Medical Corps detachment from the Second Military District (New South Wales) was sent to Melbourne to receive the colours. Attached to the standard is a silver plate which bears the inscription:

Presented by His Most Gracious Majesty the King Emperor to the Australian Army Medical Corps in recognition of service in South Africa—1904.

These colours were unique, for, as far as could be ascertained, the grant of King's Colours to the Australian Army Medical Corps was the only known instance in which a medical service had been so signally honoured.

The colours had been lost sight of for many years, and were finally discovered in 1929 in a store room at the Victoria Barracks, Sydney. The question of their disposal

then arose and, as it was clear that these colours were presented to the Australian Army Medical Corps and not to the New South Wales Army Medical Corps, it was decided that the colours should be placed at Army Headquarters until moved to Canberra.

As the expected transfer to Canberra did not take place and there was danger of the colours deteriorating, and as it was thought that these colours should be displayed, the Director-General of Medical Services in 1931 requested authority to hand over the King's Colours to the temporary charge and care of the Council of the British Medical Association (Victorian Branch), who kindly offered to provide for their suitable display and preservation. With the concurrence of the Adjutant-General and the approval of the Quartermaster-General, the colours were handed over at a parade on December 16, 1931.

It was thought that it would be advisable to retain the colours in their present position until after the meeting of the British Medical Association to be held in Melbourne in 1935, which was likely to be attended by at least one hundred members from overseas; and many former and serving members of the Australian Army Medical Corps from all parts of Australia would then have the opportunity of viewing these colours, after which it was hoped that they would be displayed in every State before final disposal.

The following was an extract from "The Official Records of the Australian Military Contingents to the War in South Africa, 1899-1902":

The Australian Commonwealth Army Medical Corps Contingent was composed of units from all the Australian States under the command of Major T. A. Green (Field Hospital) and Major Howse, V.C. (Bearer Company).

The following was an extract from *Commonwealth of Australia Gazette*, Number 65, of November 21, 1903:

1. The whole of the existing Army Medical Services of each State will be dealt with as one Corps and will be styled the Australian Army Medical Corps.

The following was an extract from General Orders, 1904, Headquarters, Melbourne:

No. 243.

Thursday, 20th October.

2. His Excellency the Governor-General and Commander-in-Chief has been pleased to intimate his intention of taking the opportunity of the above-mentioned Royal Review to present, by direction of His Majesty the King, King's Colours to the following Regiments and Corps in commemoration of services in South Africa:

Australian Army Medical Corps.

No. 253.

8th November, 1904.

Royal Review.

Representatives of certain Regiments and Corps will be present to receive the King's Colours, in recognition of Services rendered during the South African Campaign, 1899-1902.

Regiment or Corps.	Representatives.
	Rank and Name.
Australian Army Medical Corps	Lieut.-Col. R. E. Roth, D.S.O. Warrant Officer E. P. Mason Sergt. A. Hole

Section IV: Obstetrics and Gynaecology.

Cervicitis.

Dr. H. S. McLELLAND (Brisbane), in his presidential address, discussed the pathology and treatment of cervicitis. He said that injury and infection of the cervix were the starting point of more than half the ills to which woman was subject. The beginning of disease of the cervix was usually an inflammation, preceded, as a rule, though not invariably, by injury, such as occurred at parturition.

Dr. McLelland first of all discussed acute inflammation. He traced the origin and development of an erosion, and he showed that the ultimate stage of the so-called healing of an erosion might result in an unhealthy condition. The surface was covered, as normally, with stratified epithelium, but beneath the surface were cystic and, as a rule, infected glands with pseudo-malignant columns of cells derived from the deep layers of squamous epithelium. This was the most common origin of the hypertrophied cystic cervix.

In chronic cervicitis the appearance varied with the presence or absence of lacerations and erosions. Although chronic cervicitis was, strictly speaking, never cured in the sense that a complete return to normal occurred, there were some cases that worked out their own salvation by a natural process and without treatment. With the subsidence of infection the way was clear for the squamous cells to bury any erosion. Sealed glands might become cystic; these cysts might be absorbed, and with their disappearance the cervix shrank, so that ultimately a healthy condition was reached. When the cervix was torn during labour, a bare area was created. This became covered by columnar cells from the cervical canal, and new glandular tissue was formed. The lacerated area became a focus of chronic sepsis. The pain associated with a lacerated cervix was due, not to the scar tissue that formed, but to the inflammatory process that was continually present. When the cervix was torn in its whole length the infection might spread and a chronic cellulitis of the broad ligament be the result.

The worst that could happen to a cervix was the development of cancer. As cancer was usually preceded by inflammation and erosion, it was wise always to suspect cancer until its existence could be excluded. In discussing the diagnosis of cancer of the cervix, Dr. McLelland referred to the use of the colposcope and also to Schiller's test. This test was dependent on the fact that the mucous membrane of the vagina and the portio in its healthy state was rich in glycogen; the glycogen disappeared when cancer supervened. Since only healthy squamous epithelium took the stain, the test merely indicated the area that should be subject to biopsy.

After discussing the clinical features, Dr. McLelland turned to treatment. He dealt first of all with the question of drainage of the infected discharge and then with the promotion of a reaction. In this regard he described methods of using the douche. He referred also to so-called medical diathermy. He said that in selecting a line of treatment it was necessary to take a long view of the case. In young women the cervix might nearly always be treated conservatively, even though there might be a laceration or an erosion. Infection was first to be overcome, after which the erosion might be dealt with; the laceration might then be repaired. A cardinal mistake was to undertake any sort of operation in the presence of gross infection.

After passing reference to the electric cautery and to the operative treatment of cervicitis, Dr. McLelland spoke in some detail about electro-coagulation of the cervix. He had used this method in 150 cases. Briefly, it consisted in the destruction of the whole of the glandular area of the cervix by diathermy. He pointed out that because it was simple and easy for the patient, it had been used too freely in recent years, with too many bad results. In

his own cases the early results had been uniformly good, no doubt owing to the removal of a septic focus. There were, however, a number of cases in which the late result was disappointing. A total of 150 cases was spread over a period of seven years, ended in June, 1933. Most of the patients had been seen regularly, and eighty of them during the previous six months. Of the eighty patients, seven had had unsatisfactory results and had required amputation or hysterectomy. Dr. McLelland gave details of these seven cases.

The Endocrines and Gynaecology.

Dr. R. FRANCIS MATTERS (Adelaide) read a paper on the endocrines in relation to gynaecology. In discussing the present state of knowledge of sex hormones, he referred to oestrin, progestin, the anterior pituitary hormones, the posterior pituitary secretion, the thyroid, the suprarenal glands.

He discussed endocrine therapy in relation to different pathological states. In regard to dysmenorrhoea, Novak and Reynolds had shown that oestrin activated uterine contractions and that progestin relaxed them. Progestin was therefore indicated in the treatment of the spasmodic type of dysmenorrhoea and progestin should be useful in habitual abortion. Kennedy had made claims to useful results in the treatment of dysmenorrhoea by administering folliculin during the premenstrual phase. This work had not been supported by Reynolds. Dr. Matters himself had been unable to obtain therapeutic results when certain extracts of this type were given by mouth.

In regard to amenorrhoea, Dr. Matters gave details of a case in which he had had success with the use of "Antuitrin" followed by "Theelin". The treatment of menorrhagia depended on several factors that included the age of the patient and the cause of the menorrhagia. If the patient were relatively young, it would be wise, in the absence of any obvious pathological condition, to give thyroid extract. If the condition were due to failure of the parathyroid secretion, a satisfactory result would be obtained by the administration of parathormone. Dr. Matters mentioned several preparations with which he had not obtained success. At the same time he said that the results of organo-therapy had been so good in menorrhagia that by its means the need for frequent curettage of the uterus, for radium treatment and for more radical measures might be obviated.

In discussing habitual abortion, Dr. Matters referred to a patient whom he had treated with progestin extracted from sows' ovaries. The patient was carried on for six months, and at this time she had a heavy fall and later the fetus was extruded. He had found that the menopausal discomfort arising from subjective symptoms had been mitigated by treatment with the follicular hormone. He also related a success obtained in the treatment of mastodynia.

In his concluding remarks Dr. Matters referred to certain extracts that he had found to be inert. He said that many of these preparations were broadcasted with an endocrinological *vade mecum* that was pernicious and inaccurate. Some so-called extracts contained enough active thyroid extract to produce some effect. Practitioners should be careful in accepting what they were told about proprietary preparations.

Dr. H. H. SCHLINK (Sydney) thanked Dr. Matters for his lucid explanation of endocrine action. He thought that this matter must be kept in the hands of experts, such as Dr. Matters. It was beyond the realms of the general practitioner to use these reagents, and the intelligentsia were only beginning to understand it themselves. He considered it a matter of practical importance that the reliability of the Aschheim-Zondek test was as assured as that of the Wassermann test, and could be taken as 98% correct.

He thought that the profession was being imposed on by the proprietary firms, and that the only value of most of the products was from the thyroid contained in them. He also thought that they deteriorated on the voyage out from Europe or America.

He thought that this was a class of work still in the hands of specialists and that it was greatly to be regretted that hospital support for research had been withdrawn from Dr. Matters.

DR. T. W. LIPSCOMB (Sydney), speaking as Chairman of the Australasian Medical Publishing Company, Limited, said that Dr. Matters had forwarded to the Editor of the journal an account of his investigation into the inertness of trade preparations. After legal advice was taken it was decided that it would be unwise to publish the article.

DR. R. I. FURBER (Sydney) thanked Dr. Matters for the extraordinarily able exposition of the subject. He felt sure that in some cases there had been an improvement in menopausal symptoms after the administration of ovarian extract.

DR. B. K. SUTHERLAND (Melbourne) said that members of the medical profession, on reading the attractive literature on endocrines, attempted to have a "shot at it", as in some cases they did appear to get results. Speaking generally, after a rough clinical trial he had had some good results with "Agomensin", but there was often a liability to relapse. He thought that the expense of treatment by these preparations was enormous.

DR. H. H. SCHLINK (Sydney) was interested in the treatment by stimulation of the pituitary and had used Werner's technique in fifteen to twenty cases and had had very little result.

DR. E. BETTINGHAM MOORE (Hobart) suggested that a resolution be passed advising practitioners, in order to avoid confusion by a multiplicity of terms, to adopt a uniform phraseology in reporting cases or in referring to endocrine substances. The uncertainty of the potency of the preparations caused much disappointment and discouragement. He considered that the use of these drugs often had a psychological effect on the patient.

DR. H. S. McLELLAND (Brisbane) said that he had used "Prolan" in cases of menorrhagia of a mild degree such as would not be severe enough for treatment by radium or hysterectomy. Results had been gratifying. Early cases of *metropathia hemorrhagica* in which there was no evidence of inflammatory disease, were suitable. The effect was a restoration of the normal menstruation and a reduction in the flow. It appeared that stimulation of *corpus luteum* formation was achieved. In many cases after administration of "Prolan" there were symptoms resembling nausea and vomiting of early pregnancy, and he found that the symptoms attributable perhaps to *corpus luteum* hormone were prevented by the administration of "Theelin" or "Theelol" for a day or two before menstruation.

He asked Dr. Matters whether he thought that nausea and vomiting of early pregnancy were attributable to the *corpus luteum* hormone.

Dr. Matters, in reply, thanked members for their kind reception of his paper. In reply to Dr. Lipscomb, Dr. Matters said that he had sent for publication a report of his assay of most of the anterior pituitary and ovarian extracts. This report was a statement of the actual result of assay on experimental animals, and the majority of the alleged extracts were found to be inert. Most of the extracts were less active than they were reported to be.

In reply to Dr. Furber, he agreed that some extracts had given results, especially the keratin-coated and salol-coated ones. His contention against giving them was that they did not know how much was absorbed.

In reply to Dr. Sutherland he said that he thought that in cases of primary amenorrhoea good results could be obtained with "Sistomensin" and "Agomensin", but that there was a certain amount of unreliability. "Sistomensin" was less active than it was reported to be. He found in his treatment of primary amenorrhoea with "Sistomensin"

or "Agomensin" that as treatment was discontinued so amenorrhoea returned. There was also the question of expense to the patient.

In reply to Dr. Schlink, he said that the anterior pituitary secretion was thought to be stimulated by X-rays, but his own series were so small as to offer little proof of this.

In reply to Dr. McLelland regarding the production of "Antuitrin", Dr. Matters said that it was recovered from the urine of pregnant animals. He thought that there was a gradual fall off in the potency of all these preparations.

He thought that morning vomiting appeared to be associated with luteal secretion and that *metropathia hemorrhagica* might be due to a hormone. His own feeling was to remove the uterus. In young girls he had had definite results by endocrine treatment and many had responded to thyroid administration. There was difficulty in giving thyroid over long periods; it appeared to depress the ovarian activity as sclerosis developed in the ovary if there was an excessive dosage over long periods of time. The treatment should be controlled by basal metabolic estimation.

The Prevention of Uterine Cancer.

DR. H. H. SCHLINK (Sydney) read a paper on the prevention of uterine cancer. He quoted statistics from both surgeons and radiologists to show that 75% to 90% of patients were cured if they were in Group I (the early stage) and that none were saved if they reached Group IV. He said that if the present unsatisfactory cure rate were to be improved, two things were necessary: (1) The sufferer must present herself earlier for treatment. (2) The medical practitioner must be competent to recognize Stage I growths when she consulted him. Many medical practitioners were unable to recognize Stage II growths; patients with Stage II growths had been sent to Dr. Schlink with a diagnosis of cervical erosion. Unfortunately ordinary inspection and palpation were not at all conclusive. Dr. Schlink had great hopes of the colposcope introduced by Hinselmann, of Hamburg. This instrument gave a stereoscopic view of the cervix enlarged forty times. It displayed clearly the sharp junction of the squamous epithelium of the *portio* with the columnar cells of the endocervical canal and frequently showed up encroachments that would ordinarily escape the unaided eye. According to Hinselmann, about 20% of cervixes were normal. If there was any doubt about the character of the transition zone, a biopsy should be done and the specimen should be submitted to pathological examination.

The medical practitioner should improve both his knowledge in the recognition of and his attention to morbid conditions likely to predispose to the occurrence of cancer. He should realize also that cancer was mostly a disease affecting the parous woman at or after the menopause.

The conditions discussed by Dr. Schlink in relation to cancerous change were: infected lacerated cervixes, endocervical infections, residual cervixes, leucoplakia, desquamated patches, polypi and papules, endometrial hyperplasia, fibromyomata and endometriomata, the myopathic uterus, syphilis and tuberculosis. Dr. Schlink insisted that attention to the morbid conditions of the torn cervix was the crux of most preventive measures. He made a strong plea for the abandonment of the classical subtotal hysterectomy on account of the high percentage of residual cervixes that became cancerous. Fifty such cervixes had been encountered since 1910 at the Royal Prince Alfred Hospital.

DR. K. McINTYRE (Launceston) thanked Dr. Schlink for his important paper and thought that the education of a general practitioner should play a great part in diminishing the incidence of cancer. He thought that university teachers should insist on full examination of every patient who complained of discharge or bleeding. In his opinion every town should have a medical man who would make a specialty of this type of work. He asked Dr. Schlink whether he would adopt less drastic

measures in early cases in younger patients and also whether he had had any difficulty with subsequent pregnancies.

Dr. R. F. MATTERS (Adelaide) said that he agreed with Dr. Schlink's views as to the value of total hysterectomy. He had seen a number of recurrences after subtotal hysterectomy and thought that they might be attributed to a reduction of the blood supply to the cervix.

He said that the question arose whether radium might be of value in cases of clinical premalignant disease in younger people to save them from the more mutilating operation.

Dr. M. DE GARIS (Geelong) asked if Dr. Schlink had noted any relation between the use of contraceptives and the occurrence of malignant disease.

Dr. F. A. MAGUIRE (Sydney) said that Dr. Schlink had pointed out in his figures that the proportion of cases of cancer of the cervix to those of cancer of the body of the uterus was eight to one. He had found that the same figures held in his series of 270 cases of cancer of the uterus. Dr. Maguire had found that patients with cancer of the body of the uterus tended to report at a later stage than those with cancer of the cervix, and that secondary deposits occurred sooner and more severely. He thought that this might be due to the rich lymphatic supply.

Dr. Maguire considered that child-bearing was a definite factor in the occurrence of cancer; in his series of 200 cases the average number of children was five. He quoted an interesting case, that of a woman aged seventy-six years, who had been well since the menopause and who now had an early malignant condition starting in a small tear in the fornix. He agreed with Dr. Schlink as to the advisability of total hysterectomy, and considered that in skilled hands total hysterectomy was not more difficult than the subtotal operation. He thought that if the public realized the danger of subtotal hysterectomy as performed by occasional operators many lives would be saved.

Dr. Maguire agreed with Dr. Schlink that a competent pathologist was a necessity. He had had two cases lately in which wrong decisions had been later reversed.

He thought that the British Medical Association had been definitely responsible in spreading information to the public and the profession, and that authoritative statements signed by the Public Committee should appear in the public Press at monthly intervals. In Sydney the Royal Prince Alfred Hospital and the Sydney Hospital were investigating the treatment of cancer by two different methods—the Sydney Hospital by radium and the Royal Prince Alfred Hospital by surgical methods. Sometimes radium was used first, then surgery, and then deep X rays.

Dr. K. MCINTYRE (Launceston) said that a cancer campaign had been initiated in Tasmania with articles in the Press and wireless talks. These were given by the public health officer.

Dr. E. R. WHITE (Melbourne) congratulated Dr. Schlink on his choice of subject and his able presentation. He agreed that in pre-cancerous conditions at the menopause surgery was the correct line of treatment. He was interested in treatment by electro-coagulation in younger women hopeful of having children, who were suffering from chronically inflamed cervixes, although he thought there was a certain risk of stenosis of the cervical canal. He had been using radium for hemorrhage due to endocrine dysfunction at the menopause and had had satisfactory results and no subsequent cancer.

Dr. B. K. SUTHERLAND (Melbourne) thought it was necessary to increase the enthusiasm of the general practitioner for the early detection of cancer. Cancer was purely a local disease in its early stages and was removable. In treatment by electrocoagulation scarring was frequent, whereas a well performed amputation would leave little scarring. Every case should be treated on its merits, and Dr. Sutherland thought that total hysterectomy should be done in pre-cancerous cases. Bilateral or unilateral cervical laceration was better repaired in the early stages; this had been done by the older surgeons. He thought that contraceptives were probably deleterious,

and the irritating effect might cause a cancerous condition. The education of the public should be carried out by the Publicity Council of the British Medical Association; the difficulty was to get a man with enthusiasm.

Dr. H. S. McLELLAND (Brisbane) thought that the influence of Dr. Schlink's teaching to students would bear fruit. He agreed with Dr. Schlink's views that collaboration with a competent pathologist was most essential. Dr. McLelland had not seen any cases of cancer after treatment by radium for hemorrhage. He thought that some general practitioners had no speculum, and when they did have a look down a speculum for the first time they were liable to mistake an erosion for a cancer.

Dr. Schlink, in reply, thanked his colleagues for their kind remarks. In regard to treatment, he said that he used milder measures with younger people; each individual case was treated on its merits. In some cases diathermy would suffice. With regard to treatment by amputation, he was referring to intractable cases which had lasted over two years. He thought that an amputation of the cervix was no bar to pregnancy. Patients had also become pregnant after he had treated them by enucleation of the endometrial lining of the cervix for chronic gonorrhoea. He had tried electrocoagulation, but would not use it now. The amount of scarring in this method was, in his opinion, too great.

With reference to contraceptive agents, he regarded the butterfly pessary as a dreadful thing which led to inflammatory conditions of the cervix. In the same way it was possible for malignant disease to follow the use of ring pessaries. If proper precautions were not carried out, the normal "flora and fauna" of the vagina were interfered with.

Dr. Schlink thought that great strides had been made in later years. Biopsies were taken and pathological reports were obtained. If a biopsy was taken it was necessary to take a good-sized piece of tissue.

In cancer of the body of the uterus diagnostic curettage was now done, and the best pathological examination of these specimens should be obtained, and there were only a few pathologists who were competent to give an opinion in this class of work. At the Royal Prince Alfred Hospital the specimens and slides were brought back to the surgeon and their structure was described by the pathologist. They had applied to the Cancer Research Committee for a microtome, so that the whole uterus could be cut across in one piece and then three cross sections could be taken. His experience in the use of radium in bleeding had not been good. Numbers of patients came back and complained of pain and discharge.

He thought that hysterectomy was a more conservative treatment, as it did not kill the ovary. In radium treatment, to be more effective, the ovary was sclerosed. There was no question that removal should be undertaken in intractable cases. He agreed with the need for publicity in this matter, but the aspect of fright had to be considered. Of course, the medical profession had to be taught before the public could be educated.

In handling many cases one developed a sixth sense which made one suspect cancer when there was very little evidence of it. Their minds must always be fixed on discovering the cause of cancer. In every country they were realizing that the cause of cancer had first to be found and that the predisposing factors had to be recognized.

Acute Sacculation of the Uterus.

Dr. W. K. MCINTYRE (Launceston) reported a case of acute sacculation of the uterus. He said that the condition was exceedingly rare. Fletcher Shaw had described a case and had been able to find records of only four others, all being quoted by Döderlein. In defining the condition, Dr. McIntyre said that owing to a weakening of some part of the muscle of the wall of the uterus there occurred a localized acute dilatation. This took

place suddenly and was accompanied by acute pain. The pouch or sacculation formed was in direct communication with the uterine cavity and was lined by decidual membranes. It rapidly increased in size, its wall thinning out under increasing intrauterine pressure.

Dr. McIntyre's patient was a woman, aged twenty-six years. She was a *primipara* and engaged him to attend her confinement in the following November. Her general health was satisfactory and her menstrual history normal. Towards the end of April, when three months pregnant, she had been seized by acute pain in the lower part of the abdomen. She collapsed and almost fainted. She looked alarmingly ill, her skin was cold and clammy, and her husband thought that she would die. When Dr. McIntyre saw her she had recovered somewhat, the pain had abated and the signs of shock had passed off. Later in the day some signs of bleeding *per vaginam* appeared. Vaginal examination disclosed a retroverted uterus corresponding in size to that of a two and a half months pregnancy. A diagnosis of threatened abortion in an incarcerated retroverted uterus was made. During the next ten days (expectant treatment had been adopted) the uterus became anteverted. Later the pain recurred and the swelling increased rapidly in size. A swelling attached to the uterus reached almost to the umbilicus.

After consultation Dr. McIntyre decided to open the abdomen. A diagnosis of interstitial ectopic pregnancy was made. When the abdomen was opened a soft cystic swelling was found at the fundus of the uterus, to the right of the mid-line and about half the size of the rest of the uterus. No adhesions were found. The main body of the uterus was opened. The placenta was found partly detached, with a large blood clot between it and the uterine wall. On opening the membranes clear amniotic fluid was found and the fetus was lying in the sacculation. There was no sign of a septum in the uterus. As the patient was young and wished to have children, the uterus was treated conservatively and the operation was concluded in the usual manner. The patient made an uninterrupted recovery.

In discussing the cause of the condition, Dr. McIntyre pointed out that each author who had reported a case suggested a different cause. Freund thought that the placenta was situated in the fundus, and by slow disintegration of the muscle wall caused a weakness that gave rise to a sacculation. Shickle suggested that the ovum was implanted on the site of a small tear at the fundus, which had occurred during a previous pregnancy, and that this weak spot gave way. Shaw thought that there was a congenital weakness at the fundus, at the site of the fusion of the Müllerian ducts. In Dr. McIntyre's case Shaw's explanation could not hold because the sacculation was at the fundus—it was definitely not in the mid-line. The placenta was not at the fundus and could not have been a causative factor. Dr. McIntyre thought that in his case the condition had arisen because the fundus was unable to rise above the sacral promontory, that partial separation of the *decidua basalis* occurred with the formation of a large blood clot between it and the uterine wall. This sudden increase in intrauterine pressure caused sudden stretching of the uterine wall and rupture of some of its fibres. Dr. McIntyre pointed out that the wall of the sacculation was so thin that, had there been no interference, rupture would probably have occurred in the near future.

Dr. H. H. SCHLINK (Sydney) said that he had never seen a case of acute sacculation of the uterus, but would like to mention an interesting case which he had seen in the late stages of pregnancy with a transverse presentation. Caesarean section was done and the patient recovered. The patient was seen again years afterwards with a condition that was thought to be threatened miscarriage. On examination a small mass was felt in the left fornix and a diagnosis of possible ectopic pregnancy was made. Curettage was performed and nothing found. The cervix was dilated and a small opening was found. It proved to be a case of bicornuate uterus.

Dr. F. A. MAGUIRE (Sydney) congratulated Dr. McIntyre on his paper and advised him to have his paper reported in the journals. If the uterus was under tension, separation of the layers of the uterine muscle might occur and the longitudinal layer might remain intact. He had been called to an interesting patient, aged thirty-six years. She had been ten hours in labour when she was attacked by a sudden and violent pain and collapsed. Diagnosis of ruptured uterus was made and an operation was performed. The uterus was found to be ruptured at operation and the patient died. The uterus was examined by Professor Welsh, who found that the muscle was healthy, even at the margin of the tear. The child had a mild degree of hydrocephalus and the ordinary pains of labour had ruptured the uterus.

Another patient, who was five months pregnant, suffered from occasional attacks of very severe pain, and these always occurred when she was in some curious position, such as stooping down. Nothing abnormal could be detected by examination, and as the patient had had ten or twelve attacks of pain and was threatening suicide if not relieved, it was decided to open the abdomen. A curious tense band was detected running diagonally across the uterus from the appendix region, and the uterus was sacculated above this. The band was cut and the patient had no further trouble.

Dr. E. R. WHITE (Melbourne) congratulated Dr. McIntyre on the paper. He had seen an interesting case of bicornuate uterus in which the wrong uterus had been curetted for incomplete abortion.

Dr. B. K. SUTHERLAND (Melbourne) said that in a muscular organ a defect could always occur. He had seen two cases of sacculation of the posterior wall after ventrofixation operation had been performed.

Dr. McIntyre thanked the speakers for their remarks and said that he thought the causal factor of the acute sacculation was the incarceration of the uterus in the pelvis.

Abortion.

Dr. R. G. WORCESTER (Melbourne) sent a paper on abortion, with special reference to treatment. The paper was read by Dr. B. K. Sutherland. Dr. Worcester based his remarks on 4,424 abortions treated at the Women's Hospital, Melbourne, during the years 1930 to 1933 inclusive. Non-septic abortions numbered 3,355 and septic abortions 1,069. The total number of deaths was 54, a percentage of 1.21. Among the non-septic abortions the deaths were 0.03% and among the septic group 5.0%. It was Dr. Worcester's opinion that the great majority of all abortions were criminally induced; of the 1,069 patients with septic abortions, 443, or 41.4%, admitted criminal interference.

In regard to treatment, Dr. Worcester held that threatened abortion should be treated by rest in bed and the administration of sedatives. Inevitable abortions should be treated expectantly unless there was severe hemorrhage, when packing of the vagina was necessary. All non-septic and uncomplicated incomplete abortions should be treated by curette or curettage as soon as possible. The retained products of conception which were allowed to remain in the uterus became infected and caused uterine or generalized sepsis and other complications.

An abortion was regarded as septic when the temperature was over 37.8° C. (100° F.) or when there was some complication, such as pelvic cellulitis, salpingitis or peritonitis. Dr. Worcester referred to the two schools of thought in regard to the treatment of septic abortions. According to one, the uterus should be emptied as soon as possible. Others held that the uterus should be left for weeks before being emptied or that it should be emptied after the patient had been afebrile for four or five days. These methods had all been adopted at the Women's Hospital. The results were set out in a table, of which the following is an extract.

Group.	Total Cases.	Average Post-Operative Febrile Days.	Percentage with no Post-Operative Febrile Days.	Average Stay in Hospital.	Total Deaths.	Death Rate.
Septic cases operated on at once	102	3.72	45-10	10-92 days	2	2.00%
Septic cases treated expectantly with operation later	175	1.88	73-71	13-86 days	1	0.57%
Septic cases treated expectantly	117	—	—	22-70 days	14	12.00%

Although Dr. Worcester made a generalization that curette or curettage should be adopted in every incomplete abortion, he made the following exceptions for septic abortions: (i) When the patient was very ill, so that any movement or interference would break the slender thread of life; (ii) in the presence of any complication, such as acute pelvic cellulitis, acute parametritis, acute salpingitis, pelvic peritonitis, general peritonitis or pelvic abscess; (iii) when, in febrile patients, the cervix was closed.

Dr. Worcester described the technique employed in emptying the uterus in septic abortions, and laid emphasis on the necessity for avoiding any trauma to the uterus and adnexa. He said that the cervix should not be pulled downwards, the uterus should not be curetted energetically, and it should not be massaged. He thought that the intra-uterine use of glycerine was a valuable aid in treatment. This therapy should be adopted when curette or curettage was not employed. He described certain contraindications to its use. He concluded with a statement that septic abortions should be treated according to the indications in each individual case, but that, when possible, active treatment was to be preferred to conservative treatment.

Dr. R. I. FURBER (Sydney) congratulated Dr. Worcester on his excellent paper and agreed with him in almost every particular. He considered it opportunely written, as the policy "to leave alone" had been too long taught. He agreed with Dr. Worcester that in abortion the uterus should be curetted.

Dr. Furber considered that the use of the finger to remove fragments from the uterus was an unsurgical procedure. He held that it traumatized the uterine tissues to an unnecessary degree, and he did not believe it possible to carry the finger through the vagina without carrying infection. If the os was not fully dilated, there was also the danger of trauma to the cervix. He thought that the careful use of the curette was better than the use of the finger.

Dr. H. H. SCHLINK (Sydney) thanked Dr. Worcester for his businesslike paper. He wished to refer to the question of anaesthesia. He thought it essential that the anaesthetic should be light—a "talking anaesthetic". He thought that in curetting the uterus it was necessary to remember where the placental site was situated and to pay attention chiefly to this spot. He had found nothing to compare with Bonney's blue.

Dr. F. A. MAQUIRE (Sydney) sounded a note of warning as to the use of sponge forceps and ovum forceps. He thought that the softness of the septic uterus was not always realized and in inexperienced hands there was a very real danger of perforation of the uterus. He thought that Krupp's instrument was good, as used at the Royal Prince Alfred Hospital. He was a firm believer in the use of the flushing curette, and used one drachm of iodine to a pint of saline solution and used gallons of the fluid. It was essential that the head pressure should not be more than eighteen inches and that there should be a good getaway.

Dr. KEVERALL MCINTYRE (Launceston) said that he had been influenced by Edinburgh teaching and had always believed in carefully emptying the uterus of the retained products of abortion as soon as possible, except in those cases with definite contraindications where infection had undoubtedly spread beyond the wall of the uterus and a pelvic cellulitis or other complication had occurred.

During the last two years or so, as a result of Melbourne teaching, he had adopted more conservative measures and, rather against his old convictions, refrained from clearing out the uterus in cases in which sepsis was present or suspected. He had not been impressed with the results, and was now definitely convinced that it was wrong to leave a mass of dead necrotic tissue in the uterus as an actual or potential source of danger, if none of the contraindications laid down in Dr. Worcester's admirable papers were present.

Dr. McIntyre said that they had all seen the usual dramatic improvement in early pyrexia following a properly carried out light curettage and removal of secundines—often a foul-smelling, sloughing mass. He could see no danger in the proper use of a flushing curette and Boasman's catheter, always under very low pressure. He was glad that Dr. Worcester had brought such a useful paper before Congress, and congratulated him on his choice of a subject of such universal interest and importance to general practitioners and gynecologists.

Dr. R. F. MATTERS (Adelaide) was interested in Dr. Worcester's attitude to the use of glycerine. He considered it of great value in producing contraction of the uterus and in its washing out effect, and had used it mixed with Bonney's blue. In laboratory animals five cubic centimetres of glycerine had been injected into the uterus and ten cubic centimetres of fluid had been recovered, thus illustrating the strong hydropic effect of the glycerine.

Dr. R. G. SCOTT (Hobart) considered the use of the finger bad in curettage, and used the flushing curette.

Dr. DE GARIS (Geelong) thought that the use of the finger was sometimes an advantage; it enabled one to be sure that nothing was left in the uterus.

Dr. R. J. NIXON (Sydney) thought it dangerous to use the sound in these circumstances and used the curette to determine the position of the uterus.

Dr. B. K. SUTHERLAND (Melbourne) said that the object in the reading of this paper was to fight and to break down the old principle of "letting alone". He expressed pleasure in the unanimity of the feeling of the meeting in this matter. He also said that the friability of the uterine muscle was not sufficiently realized by inexperienced operators.

Dr. H. S. McLELLAND (Brisbane) considered the question of a light anaesthetic to be most important. He had given up the use of the finger in curettage. He thought it important that the flushing curette should be withdrawn every few seconds to insure the return flow.

Delay in Labour.

Dr. MARY DE GARIS (Geelong) read a paper on delay in labour. She said that in her remarks she would be guided by her definition of a normal labour and would therefore deal mainly with functional delay. She said that until obstetricians realized that pain, exhaustion from futile efforts, loss of sleep and food, hæmorrhage, laceration and fear were all individually causes of shock, and that in combination were accompanied by a death rate, they would take no steps to prevent delay. It appeared that the average duration of labour had increased during the past eighty years. In estimating the length of a labour,

the time limit by itself was no sufficient test. Measurement by the clock, though very useful, had to be combined with observation of the frequency and number of the pains and of their effect on the labour, on the mother and on the infant.

Dr. De Garis summarized the causes of delay under several headings: foetal mechanics, maternal mechanics, maternal physiology and uterine inertia. The main difficulty was that they did not know how to shorten the first stage of labour. In some patients the delay seemed due only to rather infrequent and weak uterine contractions. In other cases there seemed to be an actual error in the uterine contractions. Experience suggested that there was a separability of the various functions of the uterine muscle and of the fundal and cervical actions. Physiologists should investigate this question. Dr. De Garis felt that different qualities of muscle action were responsible for the efficiency of expulsion, of dilatation and of retraction.

The first stage of labour was a medical and physiological problem and not a mechanical one. Delay in labour was often due to systemic causes primarily and to uterine inertia secondarily. She had found that women treated during pregnancy for serious conditions might actually do better at labour than those whose ailments had been too trivial to attract attention. That antenatal care was universally recognized to be beneficial was in itself enough to prove that the general health was of chief importance to the labour, the puerperium and the child. They should seek the causes of poor general health of mothers instead of being content merely to specialize in treating renal conditions during pregnancy and delay during labour. Although Dr. De Garis had paid much attention to diet in the management of pregnancy, she felt that the puerperium had benefited most, the baby next, and the second stage next. The first stage had resisted all her efforts. She felt satisfied that a shortage of protein during pregnancy might prove serious either to mother or to baby and that the supply of vitamins during pregnancy was valuable to the infant. She was, however, suspicious that an overdose of vitamin during pregnancy might be responsible for faulty uterine action during labour.

In regard to management of delay in labour, Dr. De Garis thought that exhaustion should be anticipated and prevented rather than treated when it had occurred. She asked whether sedatives were enough for the dilatory first stage. She suggested that it might be better to dilate the os artificially under a general anaesthetic and then to leave the patient to see whether her second stage would be equal to the delivery of the infant. Though this was her inclination, Dr. De Garis admitted that she had not put it into practice.

Dr. B. K. SUTHERLAND (Melbourne) congratulated Dr. De Garis, who had brought forward many practical points in her paper.

He said that ante-natal care on occasions could be overdone, and the early recognition of abnormality might influence the patient's confidence in her medical attendant at the time of labour. He considered that diet played an important part in delayed labour and in convalescence; and the necessity of vegetable and salad diet was stressed. The administration of lime was particularly essential in Victoria, where there was insufficiency of lime in the water; he administered it with milk and lime water. He had also been very satisfied with small doses of quinine given twice a day towards the end of term, which he considered improved the general condition of the patient and the tone of the uterus. Dr. Sutherland thought that the post-war conditions were gradually producing reductions in pelvic measurements. The relief of pain by morphine or basal anaesthetics and attention to nourishment during labour were most essential.

Dr. E. BETTINGHAM MOORE (Hobart) agreed with Dr. De Garis that bad teeth and lack of vitamins caused much trouble. He inquired whether the persistent occipito-posterior presentations were delivered as posterior. He had not seen a case of vaginismus, and asked if the condition was situated solely at the vulva. He regarded forceps delivery chiefly as a means of relief from overexertion, and agreed that the difficulty of delivering the shoulders was a most acute one, and recommended the rotation of the anterior shoulder to the back.

Dr. EDWARD WHITE (Melbourne) could remember only one case of painless labour. He thought that the cardinal rule of a long first stage labour was to "sit down to it". Interference was the cause of still-births and trauma to the mother. He thought that it was essential to give rest by morphine or narcotics and to reassure the patient. Dr. White had not seen a case of vaginismus and thanked Dr. De Garis for her interesting paper.

Dr. McLELLAND inquired whether Dr. De Garis had used fomentos for vaginismus and whether she had used glucose in delayed labour or kept blood sugar estimation records.

Dr. De Garis, in reply to Dr. Bettingham Moore, said that the persistent occipito-posterior cases were delivered as posteriors.

She considered vaginismus a condition of tension high up in the vagina, which was caused by a disturbance to reflex action. She looked on the law of the vagina as similar to the law of the intestine: "contraction above, relaxation below". In one case she had brought the head low down in the cavity of the vagina by forceps and had then removed the forceps, only to find that the head had been sucked back again. She agreed with Dr. Sutherland as to the use of lime, and she also used a potassium citrate mixture.

In reply to Dr. McLelland, she said that she had not used fomentos for vaginismus and was pleased to hear of his suggestion of keeping a record of blood sugar estimation.

Section V: Ophthalmology.

Standards of Blindness.

Dr. LEONARD J. C. MITCHELL (Melbourne), in his presidential address, discussed the definitions and certification of blindness. He said that the decision of what constituted a blind person should lie with those who made ophthalmology their special study. He proposed to present to the Section a short account of attempts to define blindness in England and elsewhere and then to submit for consideration certain resolutions adopted by the Ophthalmological Section of the Victorian Branch of the British Medical Association in 1933.

In the course of his remarks on the attitude to the subject in England, Dr. Mitchell referred to a report of

the Prevention of Blindness Committee issued in 1931. In a quotation from this report it was stated that it was the practice of the Minister to regard persons whose visual acuity, after correction of refractive errors, was greater than $\frac{1}{200}$ (Snellen) as not being blind unless the defect of eyesight included such special conditions as a great contraction of the field of vision. In another paragraph of this report emphasis was laid on a lack of uniformity in the matter. The ophthalmic surgeons on the committee advised that the words "visual acuity" indicated the best direct vision obtainable with each eye separately or together, as tested by Snellen's types with the focus properly corrected. They divided the subjects into three

groups. Group I included those whose vision was below $\frac{1}{100}$ (Snellen). Group II included those whose vision was $\frac{1}{100}$ or better. Group III included intermediate degrees of visual acuity. Dr. Mitchell discussed each of these three groups and quoted certain explanatory notes in regard to them. He also referred to the definition of blindness in Scotland and in Soviet Russia.

Dr. Mitchell then quoted the following resolutions adopted by the Ophthalmological Section in Victoria:

(i) Total blindness includes inability with both eyes to count fingers at one metre in any circumstances.

(ii) Partial blindness includes vision between $\frac{1}{100}$ and counting fingers at one metre in any circumstances. Vision better than $\frac{1}{100}$ may be regarded as indicating partial blindness in special circumstances, such as nystagmus, albinism, high myopia, marked contraction of the fields of vision *et cetera*.

(iii) That there should be a distinction made between benefits received by the totally blind and by the partially blind.

(iv) That no person be certified as blind or partially blind until he or she be examined by a medical practitioner with special experience in ophthalmology and the certificate shall state the vision and the cause of the blindness, both primary and remote.

(v) That the British Medical Association be asked to confer with the Federal authorities on this matter.

Dr. Mitchell said that adoption of these resolutions by the Congress would greatly strengthen the hands of the Federal Council of the British Medical Association in Australia in any discussion that might ensue with the Government.

SIR JAMES BARRETT (Melbourne) opened the discussion. As ophthalmologist of the Royal Victorian Institute for the Blind, he spoke of the application for admission of patients with $\frac{1}{100}$ vision because of the certainty of work and pay which provided for the payment up to the basic wage over what the inmates earned. He also mentioned the possibility of $\frac{1}{100}$ and $\frac{1}{100}$ vision being useful; he himself had tried it for driving a motor car in city traffic. He referred to his paper on "The Causes of Blindness" in THE MEDICAL JOURNAL OF AUSTRALIA, December 30, 1933, and suggested that a better standard was needed both for ophthalmic surgeons and as a more economic proposition for the Federal Government.

Dr. J. H. BEAUMONT (Wellington, New Zealand) expressed his opinion of the importance of near-vision, possession of which enabled patients to carry on. He spoke of an injury which left a patient with a high astigmatism and $\frac{1}{100}$ vision, but only J₁₀, and he could not carry on his occupation. He considered that those whose near-vision was no more than J₁₀ should be considered near-blind.

Dr. CEDRIC COHEN (Sydney) spoke of the New South Wales schedule from the workers' compensation point of view. They considered any vision under $\frac{1}{100}$ with correction = 100% blind, under $\frac{1}{100}$ = 85% blind, $\frac{1}{100}$ = 65% blind, $\frac{1}{100}$ = 50% blind, $\frac{1}{100}$ = 25% blind, $\frac{1}{100}$ = 10% blind.

Dr. MITCHELL then suggested that a recommendation should be made to the Federal Government from the oculists of Australia and New Zealand of a definite standard. He also insisted that the examination for blindness should be made by a practitioner with expert knowledge of ophthalmology.

Dr. BRIAN MOORE (Adelaide) considered that people with homonymous hemianopia were near-blind and yet useful for work.

Dr. C. MORLET (Perth) spoke of his work in connexion with the Repatriation Department in Western Australia and asked just what was meant by "useful vision", which was frequently a question in his work in this department.

In answer, Sir James Barrett said this could be answered by the question: "Can you perform the occupa-

tion you followed before the injury?" He then moved that the four recommendations of Dr. Mitchell be adopted. This motion was seconded by Dr. Morlet and carried unanimously.

Dr. CEDRIC COHEN (Sydney) suggested that there should be more unanimity between the States on this matter and that subjects of general importance should be circulated between sections.

Dr. Moore, Sir James Barrett and Dr. Morlet promised to bring this matter before their respective sections.

Retinitis Pigmentosa.

Dr. N. D. ROYLE (Sydney) read a paper entitled: "A Surgical Treatment of Blindness Associated with Retinitis Pigmentosa." He said that it had been suggested that *retinitis pigmentosa* was due to constriction of the retinal vessels. This constriction affected both arterioles and venules and thus led to a retardation of the circulation. The sympathetic system in normal conditions acted as a constrictor of the arteries, arterioles and venules, and division of the sympathetic nerves led to vaso-dilatation, particularly as far as the arterioles and venules were concerned. This led to acceleration of flow in the capillaries, although the capillaries were not dilated, but might actually be smaller in calibre following sympathetomy. Acting on these grounds, Dr. Royle had performed an experimental operation on a man, aged forty-three years, who was suffering from *retinitis pigmentosa* and whose visual fields were too small to be chartable.

Dr. Royle described the operation of removal of the thoracic sympathetic trunk and the physiological results of the operation. He said that in his series of eighteen patients not one had anything approaching normal sight; nine had no central vision and nine had no fields at all. No patient had more than 20° of vision. Of the patients, eight showed no improvement at all, and these were mainly those with no central fixation and no fields. The condition in the early patients retrogressed. Even the patient reported in THE MEDICAL JOURNAL OF AUSTRALIA of July 23, 1932, as having recovered full sight for three years, had now contracted fields and practically only central vision. At the same time Dr. Royle gave details of several whose improvement had been maintained. One patient, for example, operated on in 1930 maintained his improvement as far as central vision was concerned, but his very small fields had vanished. Another patient, operated on in 1931, wrote that she did not have to wear her distance glasses and her work seemed much easier.

Dr. Royle said that altogether nine patients showed some improvement for a time. At the present time seven only had shown some improvement, although it was three years since operation. The ideal treatment would be to subject the patient to operation as soon as the first symptoms appeared, and it was for the ophthalmologist to discover these patients.

Dr. G. H. HOGG (Launceston) asked whether these were ordinary cases of *retinitis pigmentosa* or those familial cases associated with deafness, slightly defective mentality, peculiar or bad phonation, and, as had occurred in one case, an element of diabetes.

Dr. Royle replied that all his patients were normal and quite intelligent people.

Dr. N. D. ROYLE (Sydney) stated that one of his patients was a deaf mute, but quite intelligent, and after operation he recovered some hearing, but no speech.

Dr. LEONARD MITCHELL (Melbourne) spoke of a whole family treated at the Melbourne Hospital similar to those mentioned by Dr. Hogg.

SIR JAMES BARRETT expressed gratitude to Dr. Royle for his paper and expressed the opinion that he had devised a distinctly hopeful method of treatment of the condition.

Dr. CEDRIC COHEN (Sydney) spoke of one patient of his operated on by Dr. Royle.

DR. J. C. DOUGLAS (Ballarat) asked for any published details of the operation and was referred by Dr. Royle to THE MEDICAL JOURNAL OF AUSTRALIA, July 23, 1932.

DR. L. MITCHELL expressed the indebtedness of ophthalmologists for treatment of a condition which was hopeless until Dr. Royle devised this method. Dr. Mitchell thought that Dr. Royle's treatment should be generally adopted.

Refraction.

DR. J. C. DOUGLAS (Ballarat) read a paper entitled: "A Thousand Refraction Cases." Before describing his findings, he said that it was a great advantage to have the clinical record of his cases typewritten. This made reference much easier when the patient returned for a second interview. He also thought that it was valuable to make more than one examination. He often used a mydriatic at the first examination and the post-mydriatic test often led to slight changes in the axis of the cylinder and in the strength of the sphere finally ordered.

In order to collect the records of one thousand refractions Dr. Douglas had dealt with 1,350 cases—74% of the work of an ophthalmic surgeon was refraction work. Of the thousand patients whose refraction was treated, 53% were classified as suffering from hypermetropia without astigmatism; 16% were in the class of myopia, mostly with an associated astigmatism; 21% suffered from presbyopia, alone or with an added astigmatism. Astigmatism in one form or another appeared in 76% of the series; mixed astigmatism occurred in 9%.

In 40% of cases the patient complained of headache, while the remainder were free from headache, although they might have pain in the eyes and eyelids. The distribution of the headache was as follows: frontal in 66%, in the temples in 11%, in the vertex in 5%, occipital in 7%, and general in 11%. Frontal headaches predominated in every refractive group; headaches in the temple were found chiefly in the hypermetropic group. Vertex headaches were equally distributed through every group, and occipital headaches occurred only in the hypermetropic group.

High astigmatism was much more common in myopia than in hypermetropia and reached a higher degree. Sixteen patients had four diopters or more of astigmatism. Dr. Douglas asked whether any members had found it necessary to order bifocal lenses for young people. He had found it necessary to do so in five instances; in all of these muscle imbalance in some form was present. There were twenty cases of binocular diplopia in the series. They were due to the following causes: muscle imbalance from high errors of refraction, central nerve lesions, such as encephalitis, *paralysis agitans*, nuclear syphilis causing ocular paralysis, and traumatic paresis or paralysis of external ocular muscles. He had ordered prisms for many of these patients. Dr. Douglas said that muscle balance tests should be carried out in all adults, but were unreliable in children. Muscle imbalance due to eye strain appeared to be increasing, possibly owing to the general economic strain. Orthoptic exercises were tedious and expensive and did not give sufficient value for the time and money spent on them.

DR. LEONARD MITCHELL, the President, congratulated Dr. Douglas on his work. He offered one criticism—the use of bifocals in young people, and also the use of prisms. He considered these almost entirely unnecessary. In his opinion a full manifest hypermetropia correction could be ordered.

DR. J. A. BISSETT (Melbourne) asked Dr. Douglas if he had come across many young patients of twelve to fifteen years, usually doing university examinations, who complained of their inability to keep their eyes open and to concentrate. He had met several such cases and he had detected no error even under atropine. In these cases he found that the prescribing of *plus* lenses up to the value of +0.75 diopter for use while the patient was doing lessons proved quite satisfactory.

DR. J. H. BEAUMONT (Wellington, New Zealand) found that by using a synoptophore it was quite unnecessary to prescribe prisms in muscle weakness.

DR. C. MORLET had met cases similar to those mentioned by Dr. Bissett among school children and young typists. He found their symptoms relieved by ordering a simple correction and usually their hyperphoria and heterophoria disappeared. Some patients doing office work for the first time complained of persistent headache and showed only a small error of refraction. By putting them under a mydriatic for one week the headaches disappeared. These patients found a small spherical correction most acceptable, especially if heterophoria was present.

DR. CEDRIC COHEN (Sydney) agreed with Dr. Mitchell in ordering a full correction. He did not order prisms at all frequently, except with hyperphoria, but remarked on the frequency with which certain well known London ophthalmologists had been ordering one degree prisms with the bases inwards and with very little exophoria to be detected.

SIR JAMES BARRETT (Melbourne) spoke of the extraordinary variation in the refraction in some cases, especially in the axes of the astigmatism in the mydriatic and final tests. He congratulated Dr. Douglas on his very helpful paper.

DR. G. H. HOGG (Launceston) spoke of his preference for atropine in testing and advocated the use of a full correction in hypermetropes. He very rarely ordered prisms. In dealing with refraction cases he felt that the general health was not considered enough by some oculists. In his opinion, the headaches of adolescents were sometimes due to the absurd hygienic conditions of schools, type of the books used *et cetera*. In dealing with cases of severe migraine he found that small doses of "Luminal" once or twice a week and the wearing of a correction for the refractive error helped the patients considerably.

DR. MITCHELL expressed his thanks for the paper and referred to his own experiences in the ordering of 0.5 diopter spheres for school children. With regard to hygienic conditions, he felt that the medical aspect was too much in the background and that more attention should be paid to it.

In reply, Dr. Douglas said that he felt that Dr. Mitchell's patients might have had muscle anomalies and therefore relief to accommodational convergence gave the patients comfort. He spoke of the technical difficulty of manufacturing a prism in a bifocal lens, especially with a small correction. Regarding school children, he explained their symptoms as those of ciliary strain and the demand on convergence over long periods. He was quite in agreement with what had been said on the hygienic element.

Eye Conditions and the Endocrines.

DR. G. H. HOGG (Launceston) read a paper entitled: "Endocrines and Eye Disease".

In regard to the pituitary body, Dr. Hogg said that diseases of the pituitary were responsible for some eye conditions; the hemianopias and field defects were generally recognized, though not so well known was the yellow waxy appearance of the optic disk. Fuchs stated on the one hand that no direct action was known to follow hyperfunction and hypofunction of the pituitary. On the other hand, Fisher had suggested that some other conditions, such as hereditary optic atrophy or Leber's disease and migraine depended on pituitary disease. It was interesting to note that a minute injection of pituitary extract on the one hand and removal of the posterior lobe on the other affected the pigment cells of the amphibia.

Of the gonads much had been written. How or in what degree they influenced the eye directly or indirectly by their hormones acting on the other glands they did not know. The gonads, with the pituitary and suprarenals, formed a complicated mechanism, the interrelationship of which was not understood; disturbances in one might react on the other. Dr. Hogg thought that possibly some cases of irido-cyclitis in women, of which it was not possible to discover the cause, might be due to some obscure gonad change.

In regard to the thyroid gland, Dr. Hogg quoted Crile on the association of exophthalmos with thyroid disease. He said that he would leave the thyroid to another speaker. Crile had also investigated a series of patients who presented all the symptoms associated with hyperthyroidism except exophthalmos. The eye symptoms of these patients all disappeared when the suprarenals were denervated.

Turning to the pancreas, Dr. Hogg said that little was known of the physiology of carbohydrate metabolism and of its pathology. It was known that disease or dysfunction of the islets of Langerhans caused glycosuria. It was thought that in some cases the trouble might be due to defective liver storage, and it was known that the pituitary and adrenal secretions had certain effects on the blood sugar, tending to produce hyperglycemia, while the thyroid, by stimulating the adrenals, would have a similar effect. In the future, therefore, glycosuria might be classified as pancreatic, hepatic, pituitary, adrenal or thyroid. A hormone called vagotonine had been isolated from insulin. This had a stimulating effect on the vagus or oculo-cardiac reflex, causing hypotension. It was claimed that insulin contained two hormones, one inducing hypoglycemic action, the other having a hypotensive effect. Some samples of insulin did not contain vagotonine; and it was held that the depressing effect on the vagus caused the secretion of adrenaline. Frey also had found that the pancreas contained a circulatory hormone which produced dilatation of small blood vessels, causing hypotension.

Dr. Hogg then discussed glycosuria as it affected the eye clinically. He read extracts of an article by himself published in THE MEDICAL JOURNAL OF AUSTRALIA of May 20, 1933.

A paper on parathyroid deficiency and cataract written by Dr. L. Duncan, of Melbourne, was read in his absence by Dr. Rupert Hyett, of Geelong. Dr. Duncan stated that there was abundant evidence that parathyroid deficiency was associated with cataract formation both in man and animals. The development of cataract after parathyroidectomy during operations on the thyroid had frequently been observed in man. Dr. Duncan quoted several references from the literature and mentioned particularly forty-six cases tabulated by Fairley and two reported by him. The presence of cataract had been described also in endemic tetany, in rickets associated with tetany and in spontaneous hypoparathyroidism. Convulsions, the so-called idiopathic tetany, were commonly met with in connexion with lamellar cataract in children. Signs of latent tetany had also been found in a large percentage of adult patients with presenile and senile cataract. Kirkpatrick stated that symptoms of hypoparathyroidism were common in cases of cataract. He suggested that minor degrees of parathyroid deficiency, insufficient to cause convulsions, might be comparatively common and that they might have an important influence in causing cataract.

Dr. Duncan then discussed calcium metabolism. He stated that the parathyroids had a well established rôle in calcium metabolism. They controlled the calcium content of the blood; and after parathyroidectomy there was a reduction of serum calcium. Hypocalcemia and cataract were both part of the syndrome of parathyroid deficiency. There had, in view of these findings, developed the theory of a relationship between calcium metabolism and the production of cataract. This theory derived support from a number of observers who found that the calcium content of cataractous lenses was higher than normal. Dr. Duncan then stated that there was no evidence to prove that a low blood calcium content or even a disturbance of calcium metabolism was the cause of cataract. The increased calcium content of cataractous lenses might represent merely the calcification of a damaged tissue. The occurrence of cataract with a low blood calcium content in hypothyroidism might be only a coincidence. The mechanism of cataract formation in post-operative tetany was not understood.

Dr. KENNETH NOAD read a paper on the association of ocular disorder with thyroid disease. He said that the trend of opinion was not to regard exophthalmos as the product of disordered thyroid activity alone, but rather

to look upon exophthalmos and thyroid enlargement, with its sequelae, as constituting a clinical syndrome, the cause of which was at present obscure. There was some evidence that the cause might be found in a local lesion of the central nervous system. Dr. Noad thought that this view of the relationship between hyperthyroidism and exophthalmos was logical.

Dr. Noad referred to the views that had been advanced to explain exophthalmos. The earliest was that propounded by Müller in 1858, that the vestigial plain muscle fibres bridging the inferior orbital fissure and supplied by sympathetic nerve fibres contracted under the intense sympathetic activity of hyperthyroidism and forced the globe forwards. No less an authority than Treacher Collins accepted the theory of neuro-muscular stimulation as the cause of exophthalmos in exophthalmic goitre. There were facts, however, which indicated that Müller's muscle could not be a potent force in producing proptosis of the eye. Anatomists could find no evidence of the structure. If these fibres were present, they were so tenuous that they would be mechanically incapable of producing proptosis of any degree. There was excellent evidence, however, of sympathetic action. Dr. Noad quoted several clinical cases in support of this statement. The theory of increased orbital fat had been propounded by Mendel in 1892. Vascular engorgement and edema had also been advanced as a probable cause. Dr. Noad described the views of several observers who supported this view.

Dr. Noad said that he thought that in reality there were several factors operating which embraced several of the theories that had been advanced. There was undoubtedly some evidence for the influence of nervous activity in the production of exophthalmos, but he thought that its effect could be completely explained only by postulating its action as primarily central and secondarily peripheral, through the sympathetic nervous system. Once the syndrome of hyperthyroidism and exophthalmos was produced by the lesion of the central nervous system to which he had already referred, the outpouring of increased thyroid secretion, an undoubted sympathetic stimulant, brought into play the peripheral component, and so a vicious circle was established which could be broken only by the removal of the thyroid gland. As to the mechanism of exophthalmos he felt that disordered orbital vasculature must be a factor, in view of the fact that edema of the retrobulbar tissues and extraocular muscles had been found so consistently both before and after death.

In conclusion, Dr. Noad referred to the rare type of exophthalmos described mainly by Naffziger. This exophthalmos, instead of subsiding or remaining in *status quo* after operation, increased alarmingly. Dr. Noad also described Naffziger's operation for the relief of this condition.

Dr. J. F. WILLIAMS (Melbourne) read a paper on the pituitary, its pathology and its effect on the eyes. He first of all described the anatomy of the pituitary body. He then said that the clinical syndromes that had most bearing on ophthalmology were most often due to tumours arising in or near the *sella turcica*. After enumerating the different types of tumour that might arise from the pituitary gland, and their syndromes, Dr. Williams pointed out that the endocrine symptoms might precede for years the visual defects and might serve as a valuable clue to the cause of visual defects and ophthalmoscopic changes.

Dr. Williams said that interest in the association of bitemporal field defects with lesions of the pituitary gland was of comparatively recent date. This interest was augmented by Marie's description of acromegaly, though amaurosis in a case of pituitary tumour was reported over two hundred years before. It had been stated that before Marie's description of acromegaly in 1886 only 5% of the 59 cases of bitemporal hemianopia reported were ascribed to lesions of the pituitary, 40% being reported as of unknown causation. Of 256 cases reported over some years since 1886, 50% were ascribed to the pituitary and less than 5% were described as of unknown origin. Cushing had pointed out that in his series of pituitary conditions with involvement of the chiasma and field defects one of

every three patients showed an homonymous hemianopia or a tendency in that direction.

The optic chiasma was open to considerable variation. In 96% of cases the chiasma lay wholly or partly over the *diaphragma sella*, but in some 4% of cases the chiasma lay wholly behind the *diaphragma*, resting on the *dorsum sella*. In only 5% did the anterior border of the chiasma rest in the chiasmatic sulcus on the sphenoid. It was obvious, therefore, that in the majority of cases an enlargement of the pituitary would first press upon the crossed fibres of the chiasma and the chiasmal ends of the optic nerves, but in others it would be the optic tracts and the dorsal angle of the chiasma that would be first affected. The distance between the basal surface of the optic chiasma and the *diaphragma sella* had been found to vary between actual contact and ten millimetres. In the latter group it was obvious that considerable enlargement of the pituitary might occur before any pressure or stretching of the chiasma would arise. In fact, 20% of pituitary tumours showing other neighbourhood signs showed no field defects.

Dr. Williams referred to the view of Lillies that pathological changes in the optic nerves in pituitary tumour could best be interpreted as due to pressure upon and grooving of the nerves by the anterior portion of the circle of Willis, generally the anterior cerebral artery. The posterior communicating artery, as it crossed the optic tracts, was in such a position that with enlargement of the pituitary pressure could readily be exerted on the tracts; in some cases this artery was much larger on one side than usual. The optic tracts were in close relation to the cerebral peduncles and a tumour enlarging upwards could easily exert pressure on the tract between the tumour itself and the hard unyielding peduncles. The dura also above the optic foramen formed a fold against the edge of which the nerves might be pressed by an enlarged pituitary. It was thus clear that there were numerous ways in which pressure or traction could be exerted on the nerves, chiasma or tracts; and it was to be expected that as a result considerable variations in type of field would be found.

It had been suggested that pressure by the enlarged gland produced field defects by forcing some fibres across others, leading to a condition of strangulation and blocking of function. Dr. Williams said that unless some such factor as strangulation or anemia of the fibres were postulated it was difficult to see how such a large proportion of bitemporal field defects could occur as a result of pressure on the gland itself, as the difference in the degree of pressure on the crossed and uncrossed fibres must be very slight. As a general rule it could be said that sharply localized pressure would produce permanent damage more readily than diffuse distortion, and it had been shown that the prognosis with a field defect due to a tract lesion was worse than with a defect of similar extent due to a nerve lesion, the reason being that the retinal ganglion cells continued to exert a trophic influence over the nerves, even when complete blindness had occurred. There was no evidence to support the view that toxins elaborated by the tumour were responsible for the field defects.

SIR JAMES BARRETT (Melbourne) opened the discussion by referring in complimentary terms to the mass of information relative to the ductless glands which had been placed before the Section. But he could not forget that the unratified theoretical explanations of their mutual reactions changed with startling rapidity and no stability had so far been attained. Until recently the theory of the causation of eye disease by septic foci had held the field. It was obvious that septic foci should be removed, and it was possible that they might cause eye disease, but scientific proof was lacking. Some time before, a Scotch specialist had reported with pride that a quarter of the youth of Scotland had undergone tonsillectomy. Scientific investigation had to show that the removal of tonsils had not diminished the liability to any disease except diphtheria, which could, of course, be prevented by simple means. Here was probably another instance of the observation of Francis Bacon: "Men mark where they hit and not

where they miss." Now it seemed to be the turn of the endocrines, which might or might not be responsible for eye disease. He preferred to take his stand on the secure stepping stones of definite clinical facts.

Referring to the details of the discussion, in the majority of cases of diabetic retinitis he had seen the appearances and the conditions were those of cardio-vascular disease and not peculiar to diabetes. The exophthalmos in thyroid disease had been under discussion and objection was taken to the vascular and muscular explanation. Yet the division of the cervical sympathetic caused exophthalmos. He had seen a case of recurrent angio-neurotic oedema of the orbit with rapid protrusion of the eye and severe general symptoms. Thrombosis of the cavernous sinus also caused protrusion rapidly. Whatever might be the causes in other cases, here the facts were definite. Whilst dealing with the subject, could anyone tell him why the lower lid was raised when the eye was drawn upward? The only disease in which paresis of the lower lid occurred was leprosy, and he did not think paralysis of the orbicularis furnished a complete explanation. There was no doubt that a full investigation of the unstriated muscle in the orbit was wanted. Proof that the endocrines could cause eye disease was wanting, however suggestive the facts. A sound policy was to watch with an open mind.

Sir James Barrett referred to a paper by W. A. Fitzgerald that was published in the *Dublin Journal of Medical Science*, March and April, 1883. The same author at or about the same time had raised the problem of the cause of the movements of the lower eyelid. Fitzgerald thought that it was likely that the chief causative factor of exophthalmos was a vascular one. In this connexion he had referred to: (i) the vascular bruit heard at times, (ii) the occasional disappearance of exophthalmos after death, (iii) the occasional extremely rapid onset, (iv) its causation in animals by tying the internal and external jugular veins and dividing the sympathetic.

Dr. J. C. DOUGLAS (Ballarat) said that he considered the importance of dysfunction of the endocrine glands in causing eye symptoms and eye disease to be very great. Dr. Hogg had remarked that he had never seen glaucoma as a complication in diabetes. Dr. Douglas had recently had a case of diabetes in an elderly patient in whom a comparatively slight injury caused acute iritis, followed by a marked secondary glaucoma. Paracentesis was required to relieve tension and then atropine for the iritis. Dr. Douglas thought that of all the ductless glands the pituitary had the most interest from the clinical and diagnostic point of view. In one of Dr. Douglas's cases the retinal appearances were those of a typical diabetic retinitis. Yet the patient eventually turned out to be suffering from a pituitary tumour. Again, an apparently typical renal retinopathy might turn out to be an essential hypertension of malignant severity, as in a young girl under his care a few months previously. He had been disappointed with the results of treatment with parathyroid gland extract, and calcium medication in conical cornea, although there was supposed to be some causal relationship.

Dr. Douglas wished to congratulate those who had submitted excellent papers on these subjects, and the Executive of the Section on their selection of this matter for discussion.

Dr. H. F. MAUDSLEY (Melbourne) referred to a patient, aged thirty-eight years, who gave no history of previous illness, but who four months previously had noticed some alteration in his vision. He consulted Dr. Arthur Joyce, who noted a mild degree of pallor on the temporal side of the left disk. The fields of vision showed a superior quadrantic loss of the right temporal field; the left field was normal. At intervals the fields were tested and a definite progression of the field loss had been shown. X ray examination of the skull revealed a definite shadow in the suprasellar region. The patient had recently been suffering from headache and an operation was advised. Just before Dr. Maudsley left Melbourne Dr. Alan Hailes had explored the suprasellar region by the left frontal route and removed a cystic tumour

containing calcareous nodules. This case demonstrated the diagnostic value of early visual field examination.

Dr. MITCHELL, in thanking the speakers for their papers, agreed with Dr. Hogg that retinitis occurred in diabetes, but he doubted whether any case was true diabetic retinitis. He thought they were usually associated with considerable vascular damage. He thought Dr. Noad's paper a very valuable contribution. He found Dr. Williams's paper very interesting, especially with regard to the recent surgical advance in the matter.

In reply, Dr. Noad thanked Sir James Barrett for his remarks and was interested to know that the theory of the central origin of exophthalmos had been propounded so long ago. He was afraid he could not help Sir James regarding the causation of the movement upward of the lower lid on looking up.

Dr. Hogg, in reply, agreed to differ on the subject of diabetic retinitis. He did not think a fat increase occurred in exophthalmos, he was more inclined to the causation as due to an acute nervous state.

Dr. Williams expressed his interest in the preparation of his paper and thanked the Section for the courtesy of being asked to read it.

Oculists and Optometrists.

A paper by Dr. E. L. GAULT (Melbourne) on the oculist, the optometrist and the public was read by Dr. G. H. Hogg. Dr. Gault stated that claims had been made by opticians all over the world for public and legal recognition as proper persons to test the eyesight, measure errors of refraction and prescribe spectacles for members of the public complaining of failing or defective sight. Efforts to raise the status of optometrists and to create a pseudo-profession had met with success particularly in America. In Australia all the States except Victoria and Western Australia had adopted legislation that more or less satisfied the ambition of the optometrist. In England the claims of optometrists for legal recognition had been considered when the proposal to incorporate ophthalmic benefit with other benefits of the National Insurance Scheme were under consideration. The British Optical Association and the Worshipful Company of Spectacle Makers had made great efforts to secure this field of work for properly qualified and legally registered opticians. In response to strong representations by the Ophthalmological Section of the British Medical Association a departmental committee of inquiry had been set up. The majority report of this committee had stated that the setting up of a State register of sight testing opticians was not in itself a desirable policy. There remained, however, the question as to whether, in view of existing circumstances, such a step was necessary in the public interest. The answer to the question in the opinion of the committee depended on how far the medical profession was likely to be able to make the services of oculists available for persons for whom for economic reasons they were not available. Dr. Gault said that the virtual undertaking by the medical profession to make available within reasonable time the services in question had found fulfilment in the creation of the National Eye Service administered by the National Ophthalmic Treatment Board consisting of an equal number of representatives of the British Medical Association and of the Association of Dispensing Opticians. This Board had staffed centres throughout England, Scotland and Wales to the number of 305. Dr. Gault showed that through this organization it was possible for a person of moderate means to obtain professional advice and spectacles for a sum of twenty-five to thirty shillings inclusive.

In Australia it would appear that the prescribing optician had made considerable advance towards a pseudo-professional status. If a scheme of national insurance against sickness were established, and that surely was only a matter of time, it might be difficult to establish the claim of the medical ophthalmologist to an exclusive right to prescribe for disorders of sight. Large numbers of people were being educated in the belief that if the sight was found to be defective, the optometrist was the person to whom recourse should be had in the first place.

Moreover, the concentration of oculists in the capital cities and the very superficial training of medical students in ophthalmology left the greater part of the population in the country districts without ready means of obtaining medical advice about their eyes. If the medical profession was still to hold the department of sight testing in its hands, it would appear necessary to train men who purposed practising in the country, in the principles and practice of sight testing. It should be possible to establish throughout the country in Australia, as in England, centres for sight testing by trained medical practitioners, so that people might obtain advice without having to travel many miles from their homes. This was a matter that might well engage the attention of the sections of ophthalmology of the several Branches during the coming year.

Dr. CEDRIC COHEN (Sydney) read a paper on the oculist-optician question. He referred to the registration of optometrists in New South Wales, to the course in optometry at the Sydney Technical College, and to the claims and practice of optometrists. He also said that the ophthalmologists were largely to blame for allowing the present state of affairs to develop. Certain remedies could be applied. Those taken in New South Wales he put under four headings: (i) To make the general practitioner, and through him a greater portion of the public, more "eye conscious". (ii) The provision of cheaper glasses to the general public. (iii) The formation of some system of intermediate service. (iv) Cooperation of the ophthalmologists as a body to assist in carrying out these schemes. Of these plans the first two were in operation and the third was in process of discussion and development.

The first point had to be dealt with from two angles, that of the undergraduate and that of the post-graduate. An attempt had been made to secure certain alterations in the curriculum in the medical course at the University of Sydney. The alterations had not been made, but the teaching had been tightened up and some uniformity had been secured. Enough of the elements of refraction and retinoscopy was taught to make the student realize that refraction formed an integral part of ophthalmic work. The post-graduate had been given an opportunity of learning the rudiments of refraction by a post-graduate course held in Sydney. Though some persons held that such a course would turn out "half-baked" specialists, Dr. Cohen did not think so. He thought that "eye-consciousness" was created in the minds of all who attended the course; and it was unnecessary to stress the additional advantages which would be afforded to the patients by the medical knowledge that these practitioners possessed.

In regard to the provision of cheaper glasses, a firm had started in Sydney which gave a definite assurance to confine itself to spectacle making; it issued a list of charges on a scale far lower than had ever been considered. There had been an outcry from the optical world, prices had been reduced and eventually similar institutions had been formed.

A scheme for the institution of an intermediate service was under discussion and Dr. Cohen thought that something definite would soon be achieved. The scheme was something similar to that on which the National Ophthalmic Treatment Board, in England, was formed. Under this scheme no patient receiving more than a stated income could enjoy the advantages of the scheme. For those treated, a sliding scale would be prepared and the fee would include both examination and the provision of spectacles.

In conclusion, Dr. Cohen entered a plea for the cooperation of ophthalmologists. The situation concerned every part of Australia and ophthalmologists had to remember that they owed a duty not only to the general public but to other members of the medical profession.

Dr. L. MITCHELL (Melbourne) reminded members that this was an extremely important subject and hoped that Dr. Cohen's enthusiasm would be transmitted to each State.

SIR JAMES BARRETT (Melbourne) asked what control they had over the firm established to provide glasses

and whether they showed signs of wanting to kick over the traces.

Dr. Cohen replied that they had a guarantee in the form of a monetary bond.

Dr. GUY POCKLEY (Sydney) said that he had taken no active part in medical politics for some years. This was a matter in which he had been prominent about ten years ago. He had acted as spokesman on deputations to the Minister, and a bill had been put up to three successive governments. The bills had been dropped.

He took the point of view that he did not object to the man who sold glasses across the counter. The man who went to him knew that he was doing it at his own risk. The man he did object to was the optician registered by the Government with a large diploma displayed on the wall. Dr. Cohen had referred to the want of unanimity among themselves. That was so. The remedy lay entirely in their own hands if they stuck together. He had had many interests. In only one had there been unanimity. He was not advocating commercialization of the profession. There was no objection to medical men sending their patients back to opticians who recommended them. He had gone into wholesale prices. The prices charged were ridiculous. Glasses selling for two or three guineas could be sold for one-sixth of the amount with profit.

Oculists could supply glasses for so little that it would be possible to give advice and glasses for the same fee. Opticians were out to make money and so also was the association mentioned by Dr. Cohen. As far as glasses were concerned, the best glasses could be provided for so little "it would be seriously felt by the optical trader". They would lose a little at first, but that would soon be made up by the increase in the number of clients.

The Government had applied to medical men to act as examiners for opticians. He said they should not. One doctor had agreed to act, he was sorry to say. Oculists should supply their own glasses—start their own institutions and send their patients to it.

Dr. J. A. BISSET (Melbourne) did not know that he could say any more than had already been said. Dr. Cohen mentioned figures to show that enormous profits were made. They all knew that. From what he had seen the remedy lay more in getting an educated public. With regard to quack medicines the remedy lay in bringing about a public state of mind which would make the existence of quack medicines impossible. The same applied in the question of glasses. Ridiculous things had been said about playing on the fears of mothers. This applied more to country places and suburbs.

The remedy lay in some such method as that indicated by Dr. Pockley. He would be interested to know of any such thing. He considered the first step should be in the form of educating the people.

Dr. Pockley said he wanted to stress the fact that this spectacle supply institution should not make any profit for the doctors; all profits which might accrue should be devoted to reduction in the price of glasses. There should be no profit to any member of the profession. Every benefit should be to the public.

Dr. BRIAN MOORE (Adelaide) said he was quite in agreement with what had been said. He only wished they could get some such scheme in South Australia. They could if they worked together. He would try when he got back to institute something on these lines.

Dr. J. H. BEAUMONT (Wellington, New Zealand) had worked under the National Ophthalmic Treatment Board, and found it was a sound practical scheme. As regards squint he suggested that better results might be obtained by instituting squint treatment under medical supervision only.

Dr. G. H. SKINNER (Melbourne) said that he could not claim to be an ophthalmologist, but that he did refraction work. He agreed with Dr. Pockley that they must keep the issuing of glasses in their own hands and not give prescriptions to patients to be made up by an optician. Last month he had a patient with astigmatism, and he spent a lot of time on the refraction. The patient went

away to an optician in another suburb. The patient returned to the optician and said the glasses did not suit him well. The optician said that perhaps his doctor had been busy and had made some mistake and advised the patient to come to him to be looked over. The optician then corrected a mistake which he had made in the original glasses and made them conform to the prescription. Dr. Skinner said he had lost his patient, and only after eighteen months found out the cause. The optician conveyed to the patient the idea that the doctor had made a mistake, and advised him to come to him (the optician) to have the mistake remedied.

SIR JAMES BARRETT said that the late Sir John Monash had told him that he found at a meeting of the Australian Association for the Advancement of Science that professors of physics in some Australian universities advocated optometrical courses. Listeners to the wireless heard opticians' advertisements every evening, and on one golf course an advertisement was placed on every flag. The Section in Melbourne had met on the previous Thursday to discuss the question of ophthalmic intermediate practice. A meeting was to be called early in March and the whole question would be brought up for review.

An oculist's training took six years at the University, probably one or two years as a resident medical officer, and another year or two before he got a diploma of ophthalmology. Thus nine or ten years must elapse before a man could practice. If a four years' technical course for opticians held good, the position would be very awkward.

Dr. C. MORLET (Perth) said they had a very isolated and scattered population in Western Australia. Probably the matter of travelling opticians was emphasized in their State more than in other States. He was very interested in the two schemes of Dr. Cohen and Dr. Pockley. It was the first time he had heard a concrete suggestion for a definite policy. In this unanimity was absolutely necessary and was the most difficult thing to deal with. He was very glad to see that the feeling of the meeting, which represented the whole Commonwealth, suggested the possibility of unanimity in the future such as had not existed in the past. Dr. Cohen's remarks about the increase in the eye-consciousness of the general practitioner were very sound and their colleagues in Western Australia would agree with that. Many would-be patients found it impossible to make the journey to the metropolis. The general practitioner found it necessary to prescribe himself, or leave his patients to travelling opticians. He said that anything from six to ten guineas a pair were charged in country districts for glasses. Dr. Pockley had spoken of the selling of glasses over the counter. He agreed that there could be very little objection to a man selecting what he wanted in the way of glasses from the counter. Dr. Skinner mentioned the optician's criticism of the oculist's prescription. This was a very real matter in Western Australia. The oculists had been much criticized by the opticians.

Dr. Morlet said that he would take back to his State a very interesting memory of this day's discussion. He was sure his colleagues would fall into line with the proposals made.

SIR JAMES BARRETT suggested that as an outcome of the discussion a precise report of the position in New South Wales should be sent to the Federal Council.

Dr. L. MITCHELL said they would act on this suggestion and send a condensed report to the Federal Council.

He said they were bound to give patients a prescription. It was the patient's property. Not to do so would be unethical. They owed a debt of gratitude to the Ophthalmological Society of New South Wales for their work and to Dr. Cohen and Dr. Gault for presenting it so ably.

In reply, Dr. Cohen said that he realized that Dr. Pockley's scheme was the ideal one, but there was no possibility of its being carried out, because of lack of complete cooperation in the medical profession. Although

it was the model one, the scheme was out of the question as far as Sydney was concerned.

Referring to the presence of a doctor on the Board of Opticians, he said that with their consent one of their reputable members was on the Board. There were two factions on the Board, one concerned with prices, and one working for the higher degree. Advantage had been taken of these factions. Having a member of the Board to act as chairman would probably safeguard their interests.

He spoke of the scheme to encourage country specialists. Many far back centres in New South Wales had an ophthalmic surgeon practising. He hoped that in a short time there would be very few districts where a patient could not consult an ophthalmic surgeon.

There were three or four genuine dispensing opticians in Sydney. Without a bulk of business they could not reduce prices. Oculists did not want to go back on these men, as they had always stood by them.

Detachment of the Retina.

Dr. Esmé ANDERSON (Melbourne) read a paper on recent surgical treatment of detachment of the retina. She said that it was obvious that advance had been made during the last two years. The Gonin method had proved its worth, but only in a limited number of cases; its difficulties and its limitations were known. The Guist method solved some of these difficulties and brought in another—the time necessary for its performance. Dr. Anderson then spoke of her experiences with these two methods at Vienna, at London and at Melbourne. She then referred to the new method of Larsson, of Stockholm, and said that she had seen it used for the first time at Moorfields Hospital, London. Dr. Anderson described the steps of this operation in detail and pointed out that it aimed at producing a deep thermal effect with necrotization of the sclera, a diffuse area of chorioiditis being produced without injury to the vitreous and without the formation of traction strands. She said that the first few patients on whom the operation was performed were carefully chosen. Operation was successful and the patients did not relapse. Then some older patients were reoperated upon and the operation was tried in all classes of case. This considerably affected the percentage of cures. Dr. Anderson concluded that this method had a distinct advantage in its production of a diffuse area of chorioiditis, which not only sealed the hole, but also any areas of thinning which might surround it. This was done with the least possible damage to the retina and vitreous.

Dr. BRUCE HAMILTON (Hobart) read a paper entitled: "Idiopathic Detachment of the Retina and Larsson's Operation." He prefaced his remarks by stating that early in the last decade a committee of the Ophthalmological Society of Great Britain had asserted that operative treatment of detachment of the retina with a visible hole was hopeless and contraindicated. The position at the present time was very different. Dr. Hamilton referred to an article of his that appeared in THE MEDICAL JOURNAL OF AUSTRALIA of May 16, 1931, in which he summed up the position regarding the search for holes in retinal detachment. From the commencement of the surgical treatment of detachment of the retina it had been found that once the hole was located the next difficult task was to localize it with a sufficient degree of accuracy that it would be found with one application of the cautery at operation. Guist had introduced his operation because it produced a generalized and not a localized scar; this was achieved by multiple trephining and the use of a caustic stick. The idea conceived by Guist was in the right direction, but a more rapid technique was indicated, and subsequently Larsson came forward with his diathermy cauterization; and his operation had superseded all others and was certainly the method of choice. The chief difficulty that confronted Larsson was the production of a current sufficiently small to bring about the necessary localized scar in the chorioid and retina and nothing more. Eventually Flynn, of Sydney, working in London, had produced a machine with a sufficiently sensitive ammeter to register the required strength of current, namely, 60 milliamperes.

A second difficulty was the electrode. A silver electrode was first used, but was found to be too soft, and while it charred the sclera excessively, it caused a poor scar in the chorioid. An alloy of silver of the required hardness was finally produced.

Dr. Hamilton said that the time had come when they should be able to determine which detachments were suitable for operation. He stated his criteria of unsuitability. He grouped his cases under the following headings: (i) Those in which no hole could be detected, either after the patient had rested in bed in various positions or after posterior sclerotomy. (ii) Those detachments which were more than eighteen months old. The detached retina in these cases became atrophic, and Dr. Hamilton thought that the fluid became loculated, although he had no definite evidence of this. (iii) Those caused by a neoplasm or angioma. (iv) Those with multiple holes in every quadrant. (v) Those with posterior cortical lens changes. (vi) Those with gross vitreous opacities. (vii) Those exhibiting inflammatory signs. Dr. Hamilton thought that if these criteria were observed, the percentage of detachments cured by operation would soon equal those of cataract extraction. Dr. Hamilton then showed five patients and discussed the operative features in each instance. Three had been operated on by him by Larsson's technique, one had a spontaneous cure, and one was operated on by the Gonin method.

The meeting adjourned for the examination of Dr. Hamilton's patients, and on resuming, Dr. CEDRIC COHEN (Sydney) opened the discussion. He spoke of one of his patients who developed a complete retinal detachment some weeks after an operation for cataract extraction. With no treatment other than atropine, spontaneous reattachment occurred five and a half months later. He asked if any of the members could give him any information about Safar's method.

Dr. L. MITCHELL, the President, expressed thanks to Dr. Anderson and Dr. Hamilton for their papers and said that he had found Dr. Anderson's impressions of surgical methods seen abroad especially interesting. He was particularly grateful to Dr. Hamilton for the demonstration of his patients and the trouble to which he had gone to make the meeting a success.

In his opinion, hemorrhage did sometimes occur with diathermy. He referred Dr. Cohen to the *Archives of Ophthalmology*, June, 1933, for particulars of Safar's method. He used a variety of electrodes of his own design. They consisted of minute metallic bars, which he called "nails", with one, two, three or six needle points from two to three millimetres in length. He drove these needles through the sclera by holding them steady with small forceps and pressing them against the sclera with the end of the active-electrode. He did not remove the needles before the entire area was thus treated. This prevented the escape of vitreous and collapse of the eyeball.

He again congratulated Dr. Hamilton on the results of his surgery.

The Orthoptic Treatment of Squint.

Dr. J. H. BEAUMONT (Wellington) read a paper in which he discussed results of the orthoptic treatment of squint. He said that squint was much more common than most people imagined. One or two of every hundred children suffered from strabismus. Treatment had become much more satisfactory during the last few years, owing to the advance made by the development of new machines for the fusing of pictures and for controlling movements of the eyes while fusion was maintained. The synoptophore gave the best results; it was a great advance on Worth's amblyoscope.

Dr. Beaumont gave an account of eleven children who were treated for squint mainly by exercises on the synoptophore and cheiroscope. These patients all suffered from pronounced squint and so provided a severe test of the treatment. The largest squint in each school showed the most improvement. The improvement had been maintained even though treatment had been temporarily dis-

continued for months for various reasons. In no case had an operation been performed in these cases. Dr. Beaumont felt that a more careful examination would have revealed more cases of squint in the schools from which these patients were taken and that they would have responded even better to the treatment.

It was stated in most text books on diseases of the eye that little could be done for squint by orthoptic exercises after the age of seven years. It had also been stated in *The British Medical Journal* that only small squints could be improved by orthoptic treatment. Dr. Beaumont's patients ranged in age from five to fifteen years; one was ten years old, one eleven years, four twelve years, and one fifteen years. He showed photographs of some of these patients to prove that the statements referred to were wrong. At the age of twelve to fourteen years a child realized what a serious disadvantage a squint would be to him, and consequently would work very hard at the exercises. At this age squints of nearly 60° had been overcome without operation, even after the use of glasses had failed. The improvement had been maintained in cases of this type and was permanent. The statement was also made in text books that the vision in strabismus could not improve after the age of seven. Dr. Beaumont had known several children between twelve and eighteen whose vision had improved from $\frac{2}{30}$ to $\frac{4}{30}$. The statement of Worth that one-third of squinting eyes became straight with the use of glasses was still correct. In many of these cases, even if the eyes were straight, the vision of one eye had a drop to $\frac{2}{30}$ or less, and in nearly all the stereoscopic vision was defective. The earlier orthoptic treatment was commenced, the better would be the result. It was not fair to omit orthoptic treatment until glasses had been worn for twelve months.

Dr. H. R. HYETT (Geelong) asked Dr. Beaumont how many treatments he found it necessary to give the patients to achieve any possible result.

Dr. Beaumont said that with hospital patients, when the financial element had not to be considered, he sometimes had them up every day, private patients were seen three times a week for periods of half an hour to three-quarters of an hour.

Dr. BRIAN MOORE (Adelaide) stated that among their results in Adelaide were some brilliant successes and some disappointments. They had a trained central clinic at the hospital which could also deal with private cases. In one year a definite success could be claimed. In some cases the eyes could be proved mechanically straight only with a synoptophore.

Dr. EAMF ANDERSON (Melbourne) expressed disappointment that so many patients sent from the clinic at the Eye and Ear Hospital to the Squint Training Department were returned as unsuitable for training.

Dr. BRUCE HAMILTON (Hobart) expressed surprise that Dr. Beaumont could get a result after six treatments. He himself found that much longer periods of training were needed. He also thought that the criterion of cure was the Maddox test, not a synoptophore test or a photograph. (In this respect Dr. Moore said he thought Dr. Hamilton was far too exacting in requiring a Maddox test. In his opinion the synoptophore test was sufficient.) Continuing, Dr. Hamilton said he had found a great improvement in patients with very little refractive error and muscle imbalance. He met with frequent relapses up to twelve to fifteen months, when another course of treatment was given.

Dr. MOORE stated he had not seen a relapse after stereoscopic vision had been attained. He still did not think the Maddox test was necessary.

Dr. L. MITCHELL (Melbourne) agreed that training was a great advance in squint treatment; it had a definite value and they should persist with it.

Dr. BRIAN MOORE recalled the case of a patient of his with 56° squint, who was trained down to a 20° squint and simultaneous macular perception. After operation the eyes were straight and stereoscopic vision was obtained.

In reply, Dr. Beaumont considered that one trial was not sufficient to determine the suitability or otherwise of a patient for training. He agreed with Dr. Hamilton that some of his patients took infinitely longer to train than the exceptional one whom he had quoted and whose eyes were straight after six treatments.

He found the method a definite advance in the treatment of squint.

Section VI: Oto-Rhino-Laryngology.

The Enthusiasm of the Oto-Rhinologist.

Dr. H. M. JAY (Adelaide), in his presidential address, first of all expressed his appreciation for his election as President of the Section. In his address he proposed to refer to the enthusiasms of the work of the oto-rhinologist and their ultimate fate. He wished to show that there was rarely such a thing as a warrantable sustained enthusiasm in medical matters. He had been struck during the past few years by the more conservative tone of many writers on the surgical side of their speciality. This accorded with his own ideas.

Like the small boy, trembling at the prospect of the cold plunge, he would get the worst over first and start on the highly debatable subject of tonsillectomy. He stated quite plainly and unequivocally his conviction that too many tonsillectomies were performed on slight evidence or on no evidence at all that the tonsils were the culprits. The fact that the removal of tonsils would probably do no harm in certain conditions did not seem to him to be the point. The question to be asked was, Would the patient receive any benefit? He granted that it was not always easy to say that the tonsils were definitely the cause of trouble, but medical practitioners could at least tell their patients that they would observe the throat and see how it behaved so that no unnecessary operation would be performed. Dr. Jay had hoped for

great things from tonsil puncture and culture of organisms. He was told, however, by laboratory workers that this method was not scientific and that erroneous impressions might be drawn from these tests. Dr. Jay would like further enlightenment on this matter. Dr. Jay quoted some passages from the writings of Lewis of America, "the land of the tonsillectomized", in regard to tonsillectomy in children. Lewis stated that tonsillectomy in children past infancy had been overdone and had been distinctly disadvantageous. He also held that tonsillectomy in infants had seldom been justified, but had, generally speaking, been distinctly and entirely wrong.

In regard to headache and neuralgia in relation to surgery of the upper air passages, Dr. Jay stated that not so many years ago rhinologists were only too ready to find in a deflected septum, an enlarged turbinate bone or a pair of septic tonsils, the cause of a number of headaches. This was an example of early and too enthusiastic acceptance of unproven ideas. He believed that these conditions could and did cause headache in occasional cases; but he asked how often were the patients relieved by operation on intranasal abnormalities or on septic tonsils. He thought, not often. Dr. Jay referred to the writings of Wilfred Harris regarding an atypical form of neuralgia, which he was convinced was a neurosis.

Regarding surgery of the nasal septum, the medical profession owed much to Carter, of New York, for his work on the conservative treatment of the septal cartilage, especially in young people. By applying Carter's teaching Dr. Jay had been able to preserve the anterior portion of the septal cartilage to a much greater extent than he had believed possible a few years previously. There was one condition, however, in which he believed it to be good practice to resect the septum for a degree of deformity which would not in itself justify operation. This was the presence of sinus infection. In such cases a conservative attitude towards septal resection was a definite mistake.

Dr. Jay also believed that the idea that the removal of the septal cartilage could in any way modify the advance of a chronic progressive deafness was a definitely mischievous idea, except when pronounced bogginess of the tubal mucosa was present.

Concerning sinus surgery, they were not on such sure ground. He thought that most patients with acute sinusitis would get well without such treatment as zinc ionization, diathermy, injections of colloidal manganese and vaccines. He also thought that ultimately general therapy and hygiene would come to play a much larger part in the cure of ethmoidal and sphenoidal hyperplasia than operation ever would. The same held true of hyperplasia of the antrum. He said that, speaking broadly, there was required a clearer conception of what constituted a definite and progressive morbid change, as opposed to the temporary changes brought about by irritation and metabolic causes, which were themselves capable of removal or correction, with subsequent disappearance of the nasal abnormality.

Dr. Jay then discussed middle ear suppuration. They should not be in a hurry to operate in acute mastoiditis unless there was a history of previous chronic discharge; if there was such a history, not an hour should be lost. In regard to chronic otorrhoea, the indication for radical operation had become narrowed down until it resolved itself into a matter of: "cholesteatoma, operation: no cholesteatoma, no operation".

After reference to irradiation of cancer of the larynx, Dr. Jay concluded by drawing a distinction between surgery of necessity and surgery of advisability, and entered a plea for a rational outlook in all surgery of the ear, nose and throat.

Dr. G. HALLORAN (Sydney) said that he had had little experience of shock therapy in the treatment of sinusitis and could make no comment on it. His failures in zinc ionization in treatment of *otitis media* had been so many that he no longer used it. He considered that the result of the condition would have been as good without ionization. Ionization was no longer used at the Royal Prince Alfred Hospital in Sydney, and he would be glad to hear of cases in which it was used successfully.

Dr. BRYAN FOSTER (Melbourne) agreed with the plea for conservatism and shared Dr. Jay's view that they had been over-enthusiastic in surgery. He thought they should be more assertive in relation to the position. He had had patients referred to him suffering from such conditions as fibrositis and chronic rheumatoid arthritis after removal of tonsils. On finding the tonsils healthy he was still asked to remove them, though the physician could give no definite proof that the condition would be improved. The same thing had occurred in disease of the sinuses when the radiologist reported mucosal thickening, but clinically no disease was present. It was a question as to whose advice the patient was to take regarding treatment.

Dr. STODDART BARR (Hobart) agreed that it was advisable not to operate immediately in acute mastoiditis when previous *otitis media* had not been present. He also thought that it was very important to consider before any operation whether the patient would receive adequate benefit after all the circumstances were taken into account.

Radio-Sensitivity in Cancer of the Pharynx.

Dr. GARNET HALLORAN (Sydney) read a paper in which he dealt with radio-sensitivity of pharyngeal cancer. He

based his remarks on thirty cases of pharyngeal cancer from the records of the Royal Prince Alfred Hospital and from his private practice. Nine cases were selected particularly because the effects of irradiation in these cases had been observed. The series confirmed the statement that the majority of tumours in this region were radio-sensitive, but that the degree of sensitivity varied widely. If prognosis became worse as they progressed beyond the anterior two-thirds of the tongue, this was not usually due to radio-resistance on the part of faucal and pharyngeal cancer; it was because (as Ewing and Cutler had shown) the most undifferentiated types of growths occurred at the base and to some extent at the sides of the tongue in its posterior third. Such undifferentiated types were radio-sensitive. Carcinomata elsewhere in the hypopharynx were usually squamous-celled and should be as radio-sensitive as squamous-celled growths on the anterior part of the tongue were known to be. After radiation the mucosa was affected by a radio-epithelitis, appearing on the twelfth to the fourteenth day. This post-radiation oedema persisted for varying periods; it was generally described as subsiding in a month, but was not uncommonly present six to eight weeks after cessation of radiation. From a clinical point of view the intra-pharyngeal appearances after treatment by deep X ray therapy appeared to be the same as after radium therapy.

The gauging of sensitivity was aided by knowledge of the pathological nature of the tumour, and Dr. Halloran had always made it a rule to make a biopsy examination, except when dealing with flat tumours with intact mucosa. Dr. Halloran showed a series of biopsy photomicrographs together with the pathologists' reports. He pointed out that the features of these were the extreme radio-sensitivity of the lympho-epitheliomata and sarcomata, the moderate sensitivity of the epitheliomata, and the radio-resistance of the post-nasal tumour regarded as developing from an "embryonic rest".

Dr. Halloran gave details of the nine cases selected from his series. He pointed out that most of the types of tumours in this series could be made to disappear by radiation and that if they reappeared, further radiation reduced them to at least a further state of temporary quiescence; the position was secure only until such time as a radio-immunity was developed, after which further radiation was contraindicated.

If further progress was to be made, the next logical study was that of radiation immunity—a study of the irradiated living cell and living tissue. Work was already proceeding along these lines.

Dr. E. H. MOLESWORTH (Sydney) was impressed by Cases II and III, but was surprised to find such a large percentage of patients were benefiting by radiation. He thought that it was impossible to generalize in speaking of radio-sensitivity of a tumour of the pharynx or of any other situation. Squamous epitheliomata in any situation should behave in the same way. Lympho-epitheliomata were more radio-sensitive than squamous epitheliomata. With regard to atrophic changes following radiation, the dose of radiation required to cure squamous epitheliomata was more than the skin would stand and the mucus membrane was still more sensitive. The patient had to choose between death from tumour and discomfort from the atrophic areas. A carcinoma could not be treated with radiation without atrophic changes following. If the area was small, it did not matter, since the blood vessels in the neighbourhood were seen to nourish the area. If the area to be treated was larger than five centimetres in diameter, atrophy was sure to follow in time. Dr. Molesworth thought that Case IX had the appearance of a fibro-sarcoma, this was possibly due to error in technique when part of the area reacted and part failed to react. He considered it unwise to generalize and to say that radiation was either wholly good or wholly bad.

Dr. J. V. DUHE (Brisbane) considered that Dr. Halloran had reported a remarkable series of cases. In Cases I, IV, V, VI and VII there was no doubt of the radio-sensitivity of the growth. In Case VI, that of a well defined tumour, squamous carcinoma, the areas thought to be angiotic were ulcerative. It was highly malignant. Next in the series

of differentiation going backwards in anaplasia was Case VII, a typical tumour of the tonsil—a spindle-cell carcinoma and Grade 3 in Broder's classification. Very little stroma was present. There was evidence of ulceration into a vein. There was some venous spread in these tumours situated in the head and neck. Case IV was the only lympho-epithelioma present in the series, and he considered that Case V could not be similarly classified. If more care were taken in the examination of adenoid tissue in children, probably this would be found more frequently. Lymphocytic infiltration occurred in both the primary and secondary growths and was therefore part of the tissue. Case IX was an obvious failure. He considered it a myxo-fibrosarcoma from the section seen. It was not possible to say whether it was radio-resistant or not. It was typically found in young children and was the most common tumour in the naso-pharynx in children. Dr. Duhig was the first physician to diagnose and report on a lympho-epithelioma in this country.

Dr. F. P. SANDES (Sydney) considered that great benefit could be obtained by cooperation between the surgeon and the radiologist. He thought that Dr. Halloran was exceptional in having devoted time in becoming proficient in certain branches of surgery which were usually left to the general surgeon. He described how, in the dissection of the glands of the neck, in one case it was found necessary to divide the internal jugular vein on the right side and later to divide the same vessel on the left side, and the patient suffered no ill effects. He told how radium collars had been applied for intrinsic carcinomata of the larynx. Sufficient time had not yet elapsed to give definite results. He congratulated Dr. Halloran on the presentation of his cases and on his persistence in endeavouring to treat carcinomata in situations known to be difficult of approach.

Dr. G. C. SCANTLEBURY (Melbourne) regretted that Dr. Halloran had not stated more explicitly how the radium was applied. The method used by him in the past had been to divide the soft palate, to insert stay sutures and, by using a pharyngeal mirror, to obtain a good view of the area. He had used a modification of Harmer's operation, making a T-shaped incision below the hyoid bone and stripping the thyroid cartilage. By starting from above and removing one ala and continuing across the mid-line, Dr. Scantlebury thought that one could remove a moderately large amount of tissue without interfering with the airway. He then sewed in some radon seeds. He was interested in the use of the radium collar in the intrinsic forms of growth. It had always been considered that this was one form of cancer suitable for ordinary surgery. He asked whether there was any chance of producing oedema of the glottis with a radium collar.

Dr. F. P. Sandes replied that in three cases they had had no difficulty.

Dr. CLIVE EADIE (Melbourne) quoted a method he had seen in the Middlesex Hospital, where a cast of the naso-pharynx was made from dental wax and the radium needles were fixed in this. He had had patients complaining of dryness of the pharyngeal wall due to the atrophy of the mucous membrane after deep X ray therapy, but not after the use of radium.

Dr. L. M. McKILLOP (Brisbane) stated that at the Mater Misericordiae Hospital in Brisbane he had had slight success with radon seeds. He was interested in the account of the removal of both jugular veins. He recounted a case in Brisbane in which the patient died after the removal of the second jugular vein. A Royal Commission was appointed to investigate the case. He considered that dryness of the mouth was due to fibrosis round the salivary glands and mucous glands and also round the branches of the fifth nerve.

Dr. H. M. JAY (Adelaide) stated that after becoming attached to the Cancer Council he was astounded by the number of pharyngeal tumours that he saw. He was impressed by the number involving the posterior part of the floor of the mouth and the anterior pillar of the fauces. He considered biopsy before operation most necessary. He told of a case in which the clinical diag-

nosis was carcinoma of the larynx. On thyrotomy the condition was reported to be tuberculosis.

Dr. Halloran, in reply, recalled the case in which thyrotomy was done for what was apparently a malignant growth and in which the patient subsequently died of hæmorrhage. *Post mortem* examination revealed tuberculosis. He stated in his paper that he had proposed limiting the area under discussion to the pharynx, but included in the series of cases two tumours involving accessory sinuses. He did this in order to point out that in the sinuses radio-sensitivity was also present. In reply to Dr. Scantlebury, he stated that he made an incision in the mid-line going below the hyoid; he cut down to the geniohyoid muscle and, still keeping in the mid-line, cut down on the hyo-glossus muscle. When this was done the surgeon was half an inch from the epiglottis and there the radium needles were implanted. It was necessary to have absolute hæmostasis. It was also important to endeavour to prevent perforation. This prevented blood from entering the larynx and also avoided sepsis, which interfered with the radio-activity. In concluding, he stressed the point that he considered that all work of this description should be done by a team of equally important men, the surgeon, the radiologist and the pathologist. The pathologist should be able to indicate the degree of radio-sensitivity of the tumour involved. No treatment should be done without this biopsy.

Nasal Allergy.

Dr. BRYAN FOSTER (Melbourne) read a paper on allergy and the rhinologist. He said that he used the term allergy as meaning acquired hypersensitivity to some irritant. After giving details of the history of several patients suffering from allergic conditions, Dr. Foster said that he would divide allergic conditions into four groups. The first included true hay fever. These were seasonal cases due to pollens and could be dismissed with a few words.

The second group included perennial hay fever. This was a misnomer. The allergen was not seasonal. House dust, animal danders, linseed and orris root were typical examples. In many cases the patient was quite unaware of the exciting cause. Examination of the nose revealed a greyish white mucosa, patchy perhaps, and with excessive watery discharge. The patches of whitish mucosa often occurred in the nasal sinuses and were not necessarily evidence of bacterial infection. The broad difference between a nose inflamed by bacterial infection and one affected by hay fever was that the former presented a red engorged mucous membrane with muco-purulent secretion, the latter a pale mucosa with watery discharge.

Dr. Foster's third group comprised nasal symptoms combined with asthma. Many asthma patients complained of nasal symptoms and no doubt more would do so if their nasal symptoms were not overshadowed by the far more urgent chest trouble. It had been stated that as many as 80% of asthma patients had nasal sinus disease and that appreciable benefit resulted from radical surgical treatment. Dr. Foster suspected that minor abnormalities in sinuses disclosed by X ray examination had been taken as sufficient indication for operation. Dr. Foster quoted the findings of Canadian workers to show that care should be exercised in accepting reports of immediate improvement following sinus operations in asthma patients.

The fourth group described by Dr. Foster was polyposis. He said that the conception that nasal polypi resulted from bacterial infection of the walls of nasal sinuses had never seemed altogether satisfactory. Scott Williamson had shown that excessive stimuli to the nasal mucous membrane, if repeated, resulted in hyperplasia of the membrane followed by radical changes in the structure. It seemed to Dr. Foster likely that these stimuli might be provided by allergens.

In drawing attention to the prevalence of nasal allergic manifestations, Dr. Foster was not attempting to deprecate the importance of bacterial infection in causing nasal disease. Allergists maintained that microorganisms or their products might act as the antigen in allergic reactions, so there was the possibility of microorganisms

causing the allergic response in addition to the usual inflammatory one. The changes described and assumed to be primarily due to allergy, by causing obstruction to airways and degeneration of mucous membrane, must strongly predispose to secondary infection.

In his concluding remarks Dr. Foster said that operations on asthmatics were advisable only when the indication for operation would still exist if the patient had no asthma.

DR. C. SUTHERLAND (Melbourne) read a paper in which he dealt with the incidence of hypersensitivity in vasomotor rhinitis. He said that no clinicians failed to recognize the significance of extrinsic factors in typical seasonal hay fever. Perennial cases of hay fever were also easily recognized. At present there appeared to be no explanation for the development of these allergic conditions. While Dr. Sutherland did not intend to discuss the hypotheses underlying them, he referred to several important points. He said that a tendency to become hypersensitive was inherited as a dominant characteristic. It also seemed reasonable to suppose that people were exposed to much greater quantities of some organic dusts than formerly. He was sure that when the significance of dust was more clearly recognized, efforts would be made to reduce dust in the home in the same way as they had in the past been centred on the perfecting of sewage arrangements. Emptiness and simplicity of rooms and modification of architecture and furniture would be essential features of this reform. Errors of diet also impaired the health of mucous membranes, and constipation and so forth resulted in so-called toxemia.

In referring shortly to the theoretical aspect of allergy, Dr. Sutherland said that the term allergy was a broad one and was useful if used to describe a group of phenomena due to altered reactivity, the underlying cause of which was still more or less obscure. Hypersensitivity was perhaps a preferable term, as it was used in a more limited sense. Dr. Sutherland then referred to the distinction between anaphylaxis and hypersensitivity. He also reminded his audience that Sir Thomas Lewis had shown that any injury to tissues liberated a histamine-like substance, the *H*-substance, which would produce an urticarial wheal. He imagined that an offending substance, such as a pollen, fell on the mucous membrane and was absorbed by cells already sensitized by a circulating reagent. An intense poison was liberated which damaged the tissues and caused them to liberate the histamine-like substance, and this substance caused swelling and hypersecretion. If this substance were produced in sufficient quantities to circulate generally, it might give rise to asthma. Histamine could imitate in an extraordinary way in any subject the phenomenon produced by allergens in hypersensitive patients or by antigens in anaphylactic animals. Allergic phenomena often disappeared completely during febrile illnesses.

Dr. Sutherland discussed the investigation of a patient with vasomotor rhinitis. He said that it was most important to obtain a detailed history. In this way environmental factors and perennial factors would be discovered. The mode of onset of an attack was important. An influenzal attack could occasionally bring into prominence a latent sensitiveness, but was more likely to leave behind infected sinuses. A person with many allergic relatives was more likely to have some form of sensitiveness. Sneezing and itching of the nose, palate and so forth were common in allergy; predisposition to real colds was commoner in nasal sepsis. Asthma was commonly associated with allergic nasal symptoms and recurrent bronchitis with infection. Food allergy was said to be a factor in perennial hay fever, but Dr. Sutherland thought that it did not compare in importance with sensitiveness to inhaled substances. The history would generally indicate what skin test would be most helpful, but it was always useful to make tests with a few pollens and foods, whatever the history suggested. Dr. Sutherland gave a list of substances that should be used for routine tests. Of 100 patients investigated, 48 reacted to pollens, 46 to house dust, 32 to feathers, 18 to linseed, 16 to kapok, 14 to horse dander, four to maize, four to milk,

four to lentil, four to almond, four to cattle and two each to cat hair, barley, castor oil bean, rabbit, orris root, sultana, bean, egg, wheat and oat. No one could do this type of work for long without being struck by the extraordinary definiteness of the reactions and the great differences in the incidence of sensitiveness in different patients. Dr. Sutherland quoted several case histories illustrating these points.

In discussing treatment, Dr. Sutherland said that when specific sensitiveness had been found, the irritant, if possible, should be avoided. He referred to the difficulty of avoiding irritants, and laid particular emphasis on the measures to be taken in keeping the bedroom free from dust. He then discussed specific desensitization. When no sensitization had been detected he said that non-specific therapy might be used. He had found that stock vaccines sometimes worked surprisingly well, and he had had a few brilliant successes with tuberculin. Non-specific therapy, however, did not compare with specific treatment in reliability. Other measures that might be used apart from surgery included inhalations of carbon dioxide, the correction of faulty diet, the correction of constipation, exercise, glandular therapy, and attention to general hygiene.

DR. ARTHUR MURPHY (Brisbane) stressed the excellence of the papers and said that he had been under the impression that patients were sensitive to so many pollens that desensitization was too tedious an affair. He quoted Francis, of London, who advocated the use of the cautery for these conditions. He referred to a patient who, even after desensitization, still complained of the same symptoms. Submucous resection had permanently relieved a patient of his asthma. Another patient with whom he had to deal recovered following double radical antrotomy. He stressed the other side of the question, namely, advocating the thorough investigation for and correction of nasal abnormalities. He referred to Class 2 of Dr. Foster's classification and noted a patient who had had similar symptoms to these and who was not relieved by desensitization, but was finally cured by removal of middle turbinates. He had had patients relieved by one simple washing out of the antrum. If he found shreds in the washing out without finding actual pus he considered them a sign of infection.

DR. G. HALLORAN (Sydney) thought that there was still some doubt as to the real meaning of the term allergy and that, as large sums of money were devoted to the investigation of cancer in Australia and similarly for the common cold in America, it was worth while putting up large sums for the investigation of these conditions, which were some of the most disabling in the community. Since allergic conditions carried on as a dominant Mendelian trait, investigations along the lines of chromosomology might be of value. They must think in terms of all allergic phenomena and not merely concentrate on those affecting the nose. It was known that after persistent allergic rhinitis a mixed infection was generally present. This led to ciliastasis, which again aggravated the condition, leading to a vicious circle. They had all been worried seriously about the bad results of the treatment of asthma and other allergic conditions. Dr. Halloran considered that when evidence of nasal affection, such as gross polyposis, existed, and when pus was persistently present, extensive surgical measures were necessary. It seemed impossible that one sinus would be infected without the others. He thought that bad results in the treatment of these grossly affected cases were due to insufficiently extensive surgery. It was well known that one might become sensitive to one's own toxins, and so another vicious circle might occur by the absorption of toxins from one's own mucous membranes. The sphenoid was difficult to demonstrate, but was frequently affected. He asked whether the speakers had had evidence of achlorhydria in the cases cited. It was commonly known that many of those patients suffered from this condition. Did they include hydrochloric acid in the treatment? He also asked what was house dust. Having raised a wheal on his own arm by house dust from his home, from his surgery, and again in Melbourne, he thought that if the

nature of house dust were determined progress might be made.

Dr. G. A. D. McARTHUR said that he did not see many of these cases. When patients came to him he examined their air passages thoroughly. First he washed out the antrum. This often gave relief. He then gave a course of calcium lactate, and thirdly, if these measures failed, he cauterized the nose. He applied the cautery along the nasal septum opposite the mid-turbinate region. He cauterized the two sides on different days. This gave relief if done at the beginning of the summer, but usually needed to be done again the next season. It appeared to have a desensitizing effect on the nerve endings. Some patients were not relieved with all this treatment. He then referred them for skin tests.

Dr. J. A. DOCTOR (Wellington, New Zealand) said that he first inspected the nose and throat and then, reserving judgement, he sent the patient to a physician for complete examination. The physician usually found some abnormality. Dr. Doctor considered these abnormalities before commencing treatment.

Dr. C. EADIE (Melbourne) found that after removal of polypi asthma often cleared up. The anterior sinuses were more likely to give rise to asthma than the posterior sinuses. He had seen vasomotor rhinitis and rhinitis due to localized abscess in maxillary sinus. He thought that a patient could first have infection in the sinuses and then go on to develop allergic symptoms. He did not believe in going too far with surgical interference. He had seen patients with asthma who were not improved after radical operation. Clearing up of antral infections and proper drainage of the middle meatus were necessary. Ethmoidal operations did little good for asthma. He thought that shreds found after antral lavage were sufficient evidence of infection or lack of ventilation.

Dr. A. D. A. MAYES (Queensland) said that he had seen great benefit in Queensland derived from the application of the cautery to Francis's spots on the middle turbinate. One patient repeatedly gained relief from this treatment, but it had to be repeated each year. In the Brisbane Hospital, where ear and throat surgeons had waiting lists of six hundred, it had been found that when only the most outstanding complaint of a patient was treated and the patient was told to return later, he sometimes returned after three months considerably better and not wishing for further treatment. Radical operations performed in the first instance would have been inadvisable and unnecessary.

Dr. G. C. SCANTLEBURY (Melbourne) thought that men changed their opinions more frequently in practice about these conditions than about any other. Most cases were apparently easy to understand, those of simple hay fever patients sensitive to pollen and those in which sinusitis was also present. There were many other cases in which one found it difficult to discover the outstanding complaint, whether infective or allergic. Very often evidence of infection was found where it was unexpected and where surgical operation was necessary. Sphenoidal puncture and culture were very useful. They allowed one to decide whether operation should be performed. He had been disappointed with the result of treatment by the cautery; he had tried to identify Francis's spots, but without success.

Dr. H. M. JAY (Adelaide) saw eye to eye with Dr. Foster. He thought that they were justified in taking a firm stand under certain conditions. He had had referred to him patients with asthma, the mucous membrane of whose nose showed changes of typical hay fever. The problem was how to advise the physician that the patient would not benefit from surgical operation if infection was not present. He thought that reports of cures following various surgical procedures in chronic asthma, such as the removal of nasal polypi, rather tended to encourage the surgeon to operations against his better judgement. In Adelaide he found that yellow broom caused allergic phenomena in many people, and he wondered whether the same was true of other places.

Dr. Foster, in reply, said that the discussion bore out what they knew, that no two patients reacted in the same way. He drew attention to the prevalence of allergic conditions and thought that they should be borne in mind lest operations be carried out unnecessarily. If they were definitely satisfied that allergy was a perennial thing and that only a slight nasal obstruction was present, it was worth while having skin tests carried out in case operation might not be required. He thought that the cautery sometimes gave good results, especially when the psychic element was present. Patients always needed to return for further treatment.

Dr. Sutherland, in reply, regretted that in a short paper it was necessary to be dogmatic in order to make a point clear. The question of multiple sensitivity was always debated by allergists. They were up against a big problem. Usually patients sensitive to one pollen were sensitive to many. Of two hundred pollens tried, they might be sensitive to fifty. It would be necessary to use six in desensitizing them. He had seen some astounding results after antral lavage or removal of polypi. He thought that scarring of the mucous membrane caused by operation made subsequent treatment more difficult. Failures in desensitization had occurred, but there were many successes, and it was a satisfactory means of treatment. Achlorhydria was only one aspect of the digestive disturbance. He had had many cases in which the use of hydrochloric acid was successful, and others in which it was not. Some used it as a routine measure and reported as good results from it as from desensitization. There was a large portion of epithelial debris in house dust apparently connected with human activity. No benefit was derived from calcium lactate. Intravenous injections of calcium chloride were held to give good results in asthma. He thought that intravenous injection was dangerous in an allergic patient. The tediousness of desensitization was one of its big difficulties. Broom pollen was a common factor in Melbourne also, but not in such a degree as common grass pollen.

Cranial Osteomyelitis.

Dr. G. A. D. McARTHUR (Melbourne) read a paper on cranial osteomyelitis. He said that it had been a rare condition since the introduction of antiseptics. To his knowledge six cases had occurred in Melbourne during the last thirteen years. Four had been associated with frontal sinusitis and two with mastoiditis; four had ended fatally. This group of cases, though small, showed that treatment had to be varied according to the requirements of each case. Dr. McArthur referred to the writings of Dan MacKenzie in 1913 and 1927. MacKenzie classified the condition as spontaneous and post-operative, the site of origin as nasal, facial or frontal, and the course as acute or chronic.

The spontaneous form occurred most frequently in the second decade of life and followed an acute rather than a chronic sinusitis. Both diseases might be unsuspected until a sinus was opened. The post-operative form was generally seen in the third decade and might follow any type of operation on the nasal sinuses. Of the sites of origin the frontal was by far the most common. Acute cases had a duration of from three to twelve weeks, and the chronic form lasted from six months to two years.

When osteomyelitis arose in the frontal sinuses, especially after operation, the onset was usually insidious. When the condition extended to the diploe of the bone, it assumed its tendency to unrestricted spread, and the extent to which the cranial vault might become affected was practically unlimited. Wherever the condition originated, it had a tendency to extend upward to the vault. MacKenzie, in his first paper, had reported twenty post-operative cases, of which all were fatal. Later the condition had been recognized earlier and large areas of the frontal bone had been resected. In his second paper MacKenzie advocated cutting a gutter across the bone well in advance of the disease. The bone was then removed downwards until all infected areas were eradicated. While the extensive removal of bone in post-operative osteomyelitis was undoubtedly efficacious, Dr. McArthur thought

that it was debatable whether the same measures could be applied in spontaneous cases. In these the initial spread of the infection in the diploe was often rapid and extensive, but there was a tendency for a barrier to form and for the infection to become self-limited. Too early surgical intervention before the limits of the infection had become discernible might not only fail to eradicate all the diseased bone, but the trauma might break down any protective barrier that might be formed and cause a further wide-spread infection of the diploe. On the other hand, if too long a course of inactivity were pursued before the removal of necrotic bone, an extradural collection of pus might at any time break through the protecting dura and start an intracranial infection. Dr. McArthur concluded his paper by giving a résumé of the six cases to which he had already referred.

Dr. BRYAN FOSTER (Melbourne) said it was a relief to realize how infrequently this condition occurred, namely, six cases in thirteen years. It was always a likely post-operative complication. So far he had seen no cases, though he had opened many sinuses by both internal and external routes when the question was discussed at the meeting of the Royal Australasian College of Surgeons in Melbourne three years ago. At this time Dr. Foster had operated on some eighty patients who were suffering from frontal sinusitis, both in acute and chronic stages. It was a big question to decide whether a sinus operation caused spread of infection or whether the osteomyelitis was inevitable. He recalled three cases in which unsuspected sequestra were found on operating on sinuses; this showed that the condition might become arrested. He could offer no opinion as to its cause, and suggested that it was due to an infection of unusual virulence and would have progressed in any case.

Dr. G. C. SCANTLEBURY (Melbourne) had no suggestions to make as to the cause of the condition. Watkins Thomas and Dan MacKenzie had investigated a case of frontal sinusitis and had made bacterial investigations. *Bacillus coli communis* was found to be present, and they suggested that this had been the cause of the osteomyelitis. Dr. Scantlebury had seen two patients of Watkins Thomas. Watkins Thomas had performed the gutter operation in one case, and this patient died after three months. The other case was one of osteomyelitis of the face following a double radical antrostomy. The patient died. In another case foul pus had been present, a double radical antrostomy was performed and the patient did well till three weeks after the operation. Dan MacKenzie stated that the patients usually did well for three weeks.

In the last mentioned case an opening had been made at the bridge of the nose; a sequestrum was present, reaching to the cribriform plate. A gutter was made. The patient died from frontal lobe abscess. Dr. Scantlebury had seen the condition following mastoid operation, but the difference between this and other cases was that the history made one doubt whether the condition was straight-out acute mastoiditis or an exacerbation of a chronic mastoiditis. The wound healed, but the patient had persistent pain. On making an opening they had found necrotic bone, and the vertigo which had been present passed off rapidly. The patient had a dead labyrinth and paralysis of the seventh nerve. There was secondary hemorrhage from the superficial temporal artery; the patient died from meningitis three months later.

Dr. Scantlebury had seen osteomyelitis of the skull in a child of nine. The child had had *erythema nodosum* and sores on the leg, which were slow in healing. When the sores were almost healed the child had complained of pain in both ears, and there was a history of scant discharge. He was seen two weeks later, when there was tenderness over the right mastoid with some oedema. The right meatus was almost closed and the drum was not visible; no pus was found. On opening the mastoid a greenish appearance was found with no breaking down of septa. There was a dull unreacting bone in the mastoid antrum. This was drained. No granulations were present after three weeks. Pain now developed on the other side. The drum on this side had always been visible. The whole scalp became oedematous and proptosis of both eyes

was present before death. *Bacillus coli communis* was not found. He could offer no suggestion as to the cause of the condition.

Dr. C. EADIE (Melbourne) told of a case of right radical antrostomy performed in the country and seen three weeks later. Pus was present in the nasal discharge. The antrum was opened and necrotic granulations with some necrotic bone were found in the antra in the malar region. A swelling occurred over both eyes. A double radical frontal operation was performed. An oedematous swelling appeared over the frontal bone and was found to be an abscess; it was drained. The patient died from intracranial abscess. He could offer no suggestion as far as treatment was concerned.

Dr. G. HALLORAN (Sydney) concluded that the condition must be rare since there were so few cases on record. If one excluded abscesses of the ethmoid cells or frontal sinuses opening into the skull, he classified his cases into two classes: (i) the acute diffuse spreading osteomyelitis of the skull of the fulminating type, and of these all the cases he had seen had been pre-operative; and (ii) a slow spreading softening of the bone requiring local removal only. He thought that cases of the first class were due to a thrombotic condition of the veins of the diploe. In this group the condition was made evident by X rays only six weeks after its appearance. Dr. Halloran had seen two cases in the frontal bone and two in the upper jaw. He said that the patients with osteomyelitis of the second type usually died. In regard to the cause of death of patients with osteomyelitis of the frontal bones, Dr. Halloran said that if they were treated conservatively they ultimately developed intracranial abscess, otherwise they died from operative interference or from loss of blood. He pointed out that rodent ulcer in the bone was treated very effectively by the diathermy knife. The bone was killed in this way. He stated that in the next case of this disease he was called upon to treat he would use surgical diathermy. Surgical diathermy would shorten the time of operation; it would seal off the blood vessels and minimize shock and hemorrhage. Later the sequestrum might be removed.

Dr. ARTHUR MURPHY (Brisbane) had had no personal experience with these conditions. He had seen a case of osteomyelitis in a child of eleven, following an acute mastoiditis. This child had been in the country and had been neglected. It was finally brought for advice owing to a swelling over the mastoid. On opening, he found a large sequestrum, approximately 5.0 centimetres (two inches) in length and 2.5 centimetres (one inch) wide, involving the squamous temporal bone and overlying the lateral sinus, which, fortunately, was not involved. The child was well, to his knowledge, three years later. He saw a case in London treated by Dan MacKenzie. The condition followed an antrostomy. The surgeon bored into the malar process to allow for drainage, and then cut two gutters in the temporal region in an attempt to shut off the area.

Dr. H. M. JAY (Adelaide) had seen two cases, one following a frontal sinusitis. He thought that death in one case was probably due to his own inexperience. In draining a frontal sinus the anterior wall should not be removed, so that the diploe would not be opened. He had once done a radical mastoid operation, and the patient developed osteomyelitis. This had appeared to be at a standstill until after some further operative interference, when the patient died of meningitis. To his mind it was desirable to be conservative at first, later performing the same operative measure when the acute condition had settled. He could not understand why osteomyelitis should occur so seldom in mastoid conditions. He thought that Dr. Halloran's suggestion regarding diathermy was a good one.

Dr. McArthur, in reply, said that he hoped these cases would continue to be met infrequently. In all the cases that he had seen, a pure culture of *Staphylococcus aureus* was obtained from the diploe and the sinus. He agreed with Dr. Jay that osteomyelitis should be treated on conservative lines, especially when the eyelids became rapidly

swollen and a Pott's puffy tumour appeared over the frontal bone. One thus gave the disease a chance of setting up a barrier. The onset of intracranial complications was insidious. He thought that when they occurred, as large a flap as possible should be turned down over the area, and possibly a sequestrum might be present pointing to the site of the underlying abscesses. If the *dura mater* were adherent it would give a convenient stalk for drainage of the abscess.

Tinnitus Aurium.

A paper by Dr. E. CULPIN (Brisbane), on the subject of *tinnitus aurium*, was read in his absence by Dr. B. Hiller. Dr. Culpin stated that tinnitus might be classified as: (i) of local origin, (ii) of toxic origin, (iii) of systemic origin. Tinnitus of all these groups was liable to be aggravated by anything lowering the general tone of health, such as fatigue, overwork, financial or family worries and lack of work. Amongst the causes of local origin were the various forms of *otitis media*, including the simple degenerative form, which was due to age and which was sometimes of early onset. Other causes were traumatic otitis, otosclerosis, and the presence of foreign bodies, such as cerumen and masses of epithelial debris.

Toxic tinnitus might arise from many causes, but the most fruitful were disorders of the digestive and excretory organs, and also tobacco, alcohol and other chemical and biochemical poisons. Dr. Culpin had not found tonsillar sepsis to be a prolific cause of the condition.

General causes might in some cases be classified as toxic. Included in this group were conditions due to or exaggerated by endocrine disturbances, and also systemic diseases, particularly of the circulatory system. He thought that the aid of the biochemist would be essential for the effective treatment of many cases of *tinnitus aurium*.

It was characteristic of *tinnitus aurium* that it was very much worse at night time and it was never found unless it was accompanied by some interference with hearing acuity. On the other hand, of course, advanced deafness might be present without any complaint of tinnitus. This suggested that for the production of tinnitus two conditions were requisite: first, interference with the perception of sound, and secondly, a definite irritation of the auditory nerve.

In discussing the treatment of tinnitus, Dr. Culpin disregarded such causes as cerebello-pontine tumour as being beyond the scope of the discussion; and he said that an attempt should be made to discover the cause. In this search the patient's general health should be carefully investigated. When tinnitus was an accompaniment of middle ear conditions, the first step was to try to restore the middle ear to as normal a state as possible. He had been grievously disappointed with the effects of the removal of tonsils, septal spurs *et cetera* upon conditions of the middle ear, excepting actual suppurative conditions in children. Such treatment was not justifiable and was even verging on quackery. He had come to the conclusion that when local treatment was indicated in non-suppurative conditions, the most promising treatment was that based upon the use of cantharides, as originated by Heath. Dr. Culpin ascribed the results to a prolonged hyperæmia of the middle ear and adjacent parts, possibly the labyrinth, over a period of at least three months that restored local conditions to a more nearly normal state. Dr. Culpin described the cantharides treatment and said that he had found that it produced improvement in about 60% of patients treated.

Dr. H. M. JAY (Adelaide) apologized for being unconventional in opening the discussion, but thought that members would forgive him when they knew the reason. He stated that he was gratified to hear of the futility of operation in most of these cases. He had used Heath's treatment with success for some time.

Before Dr. Jay left Adelaide, Dr. William Hamilton, who had recently returned from abroad, gave him some notes, which were obtained from a lecture by Professor S. Canastrini, of Trieste, on the treatment of vertigo

occurring in cases of tubal catarrh and chronic ailments of the middle ear.

These notes, which Dr. Jay proceeded to read, told how twenty-one patients had obtained relief from the distressing complaint as a result of lumbar puncture. Several hypotheses as to the reason for this were given. It seemed clear that catarrh might cause an irritation of the endolymph in the labyrinthine canals and thus give rise to vertigo and tinnitus. Dr. Hamilton considered that the most likely hypothesis was that the irritation in the canals was transmitted reflexly to the choroid plexus in the ventricle, causing an increased secretion and thus an increase of the liquor.

Dr. A. BLAUBAUM (Melbourne) agreed that the cases due to cerumen were the simplest to treat. In those due to infection of the middle ear the tinnitus was low pitched, while that from the internal ear was high pitched. When tubal catarrh was present, clearing of the passage did not always give relief. In tinnitus without affection of the hearing there was decreased bone conduction. Tinnitus, in his opinion, was usually due to toxæmia, and by relieving the focus some relief could be given, for example, in cases of pyorrhæa. It was possibly due to a neuritis of the auditory nerve, which became swollen and compressed in its bony canal; if the toxin was allowed to continue its action, deafness would supervene.

Dr. ARTHUR MURPHY (Brisbane), in discussing Heath's treatment, stated that he had had difficulty in persuading patients to begin it or to continue with it. He thought that once the toxic factor in the middle ear conditions was excluded, it was very difficult to ascertain the cause. He had tried with some success a new preparation called "Nupantrin". He also found that syringing of the tympanic membrane with hot water, gradually increasing the temperature, produced hyperæmia in a satisfactory way. This had the advantage that the patient was able to treat himself at home.

Dr. GARNET HAILLOAN (Sydney) said that without doubt tinnitus and vertigo were due to stimulation of the eighth nerve. In distal causes, for example in the middle ear, they knew where they stood. Those more central were much more difficult. Dr. Arthur Mills, of Sydney, considered that tinnitus was due to two causes: (i) toxæmia, for example from tobacco, (ii) anoxæmia. Bárány had demonstrated frequent occurrence of tinnitus in patients with tumours of the cerebello-pontine angle or with cysts pressing on the nerve trunk. If they could not find any local cause for tinnitus they were thrown back to causes affecting the auditory nerve centre. It might be due to anoxæmia of this centre. Commenting on treatment by lumbar puncture, he said that after a few cubic centimetres of cerebro-spinal fluid were removed, it would surely be but a short time before the fluid was replaced. He would require more proof before using lumbar puncture in treatment.

Diet and Diseases of the Upper Respiratory Tract.

Dr. T. A. PRICE (Toowoomba) sent a paper on diet in relation to some diseases of the upper respiratory tract; the paper was read by Dr. B. Hiller. Dr. Price stated that it was surprising how little attention had been paid to the subject by authors of text books on diseases of the ear, nose and throat. In some journals the subject had been mentioned, but scarcely ever by laryngologists or rhinologists. Dr. Price stated that in approaching the subject it was well to inquire whether there had been any definite change in the diet of civilized peoples during the last fifty years or so, and also whether there had been any increase in disease of the upper respiratory tract. Dr. Price then referred to the modern roller mill and its action on wheat. The whole trend of modern diet was away from the consumption of fresh food locally produced to the use of more or less preserved food produced at a distance. There had been enormous increase in the amount of carbohydrates consumed, particularly sugar. In Australia each unit of the population consumed something like a hundredweight of sugar a year, or over a quarter of a pound a day. Sugar, white flour and muscle meat

formed the great bulk of the food of both country and town dwellers. This food was sufficient in quantity, but was wholly "unprotected" and had no vitamins and little of the essential salts. Another defect was the use of rain water instead of spring, well or bore water.

In regard to diseases of the upper respiratory tract, Dr. Price thought that there had undoubtedly been an increase in their incidence, and he asked whether the altered incidence was in part at least due to changes in the diet of the people. In discussing the question, Dr. Price referred to the need for a supply of vitamin A, and said that vitamin D was necessary for the proper development of the teeth and jaws. Dr. Price thought that modern diet was deficient in these. He concluded by saying that if there was any real connexion between upper respiratory diseases and diet, the remedy was plain. Oto-rhinological surgeons required to give more than surgical and medical treatment.

Dr. G. A. D. McARTHUR (Melbourne) said that the subject was very complicated. There was no country where eyes, nose and throat diseases were so common, yet no country which had a cheaper or more liberal food supply. He found it difficult to blame one for the other. These complaints occurred in the well-to-do as among the poorer people. He had seen cases in which wounds taking a long time to heal improved with a change of diet, additions of vitamins, and change of air.

Dr. G. HALLORAN (Sydney) said that the question was of national importance. He considered that the nation was developing a narrow nose. The aquiline type of face distinguished the Australian soldier at the war. According to some authorities, the cranio-facial angle was wrapped up with dentition. Possibly this change was due to vitamin D deficiency. This vitamin also had an effect on the nasal mucosa. Here a vicious circle might develop.

Dr. C. SUTHERLAND (Melbourne) congratulated Dr. Price on his paper. He noted that it was confined to affections of the upper respiratory tract. He found that in the out-patients' department children suffering from asthma frequently arrived eating biscuits and sweets. He found that by altering their diet, lessening the amount of starch and increasing the protective foods, such as milk and green vegetables, and allowing the children only barley sugar in the way of sweets, the condition was improved.

Dr. H. M. JAY (Adelaide) stated that when he had suggested this as a subject for discussion he had anticipated that the point of view of food in relation to allergy would have been more closely considered. A great deal of work had been done on this in the United States of America. Patients came to him with these conditions and he gave them a diet consisting of either alkaline or acid ash-forming foods. He hoped that before long he would be able to make some generalisation as to the effect of the various diets on the condition.

Endocrine Dysfunction and the Upper Respiratory Tract.

Dr. C. M. EADIE (Melbourne) read a paper on endocrine dysfunction and the upper respiratory tract. He began by giving a short résumé of the endocrine glands, of their active principles and of their known actions. He said that he proposed to consider the subject from two points of view. The first was dysfunction of one or more members of the endocrine system, caused by disease of the upper respiratory tract; and the other was involvement of the upper respiratory tract brought about by dysfunction of one or more members of the endocrine system.

An infection of the upper respiratory tract was the commonest cause of dysfunction of the endocrine system. The inflammation might be either acute or chronic, and the influence on the endocrine organs might occur as the result of direct spread or by spread through the general blood stream. The pituitary gland, on account of its position, was the one most frequently involved. An acute sphenoidal sinusitis could not fail to have some effect on the pituitary gland, causing inflammatory congestion and dysfunction. The result was hyperfunction of the anterior lobe and its sequelae. In chronic sphenoiditis the interference with pituitary function was more gradual. Gradual

destruction of the secreting cells occurred and they were replaced by fibrous tissue. Thus a state of hypofunction was brought about. Dr. Eadie gave the histories of three patients with pituitary dysfunction on whom he had operated by the transphenoidal route. The past history of all three patients indicated the presence of a nasal sinus infection, though actual suppurative was found only in one at the time of operation. Chronic infection of the lymphoid tissue in the naso-pharynx caused dysfunction of the pituitary gland by spread along the vascular pathways; and this was probably the cause of many symptoms shown by a child with enlarged infected adenoids. Dysfunction of the pituitary was also caused by chronic toxæmia arising from such septic foci as chronically infected tonsils.

The relationship of the tonsils with the thyroid was shown by the sequence of acute tonsillitis followed by acute thyroiditis and also by the high percentage of toxic goitres associated with infected tonsils. The function of the thyroid was also upset by dysfunction of the pituitary gland. Dr. Eadie referred to the association of acute infection of the nasal sinuses with glycosuria and *diabetes mellitus*, and he said that dysfunction of the suprarenal gland resulted from the absorption of toxins from foci of infection in the upper respiratory tract carried by the blood stream to the gland. Suprarenal function was also disturbed as a result of dysfunction of the pituitary gland. The reproductive organs were liable to be involved by blood toxæmia from foci of infection or, more commonly, as a result of dysfunction of another member of the endocrine system, especially the pituitary gland. Certain areas on the nasal mucous membranes had been called genital spots, and cases of dysmenorrhœa had been recorded in which benefit was derived from cauterization of these spots. The parathyroids were intimately associated with the pituitary and thyroid and with any dysfunction of these glands their secretion was also likely to be affected.

Turning to his second group, that of dysfunction of the upper respiratory tract caused by dysfunction of the endocrine system, Dr. Eadie referred first of all to the pituitary gland. In dysfunction of the pituitary, extraordinary pneumatization of the accessory air cavities was found. There was no apparent reason why a cyst of the pituitary should not rupture into the sphenoidal sinus and discharge its contents into the naso-pharynx. Dr. Eadie then referred to the hypothyroid state and discussed briefly the resultant susceptibility to "colds" and nasal catarrh, the thickening of the membrane lining the sinuses, attacks of vertigo and of defective hearing and alteration in the voice. He pointed out that hyperthyroidism leading to exophthalmic and other toxic goitres gave rise to ear, nose and throat symptoms associated with vascular, nervous and metabolic upset. Hypoparathyroidism gave rise sometimes to laryngospasm, and the associated disturbance of calcium metabolism was important in the consideration of otosclerosis. Hyperfunction of the medulla of the suprarenal glands sometimes led to severe occipital headache, vasomotor disturbances and attacks of epistaxis. In conclusion, Dr. Eadie mentioned respiratory symptoms associated with dysfunction of the pancreas and reproductive organs. He said finally that it might appear that he had said too much regarding the endocrine part of the story, but he held that a working knowledge of the endocrine system must be attained before any disorder of the upper respiratory tract could be associated with it. In the treatment of many of the disorders of the upper respiratory tract much help might be derived from endocrine medication.

Dr. G. A. D. McARTHUR (Melbourne) appreciated the amount of trouble that Dr. Eadie had gone to in the preparation of the paper. He himself had felt very ignorant on this subject and was grateful to Dr. Eadie for the information he had given them.

Dr. BRYAN FOSTER (Melbourne) felt indebted also to Dr. Eadie. The subject appealed to him since Dr. Jay had pleaded for conservatism. He thought that they should try to be physicians as well as surgeons and should endeavour to keep abreast with such knowledge as this and to apply it in practice.

Dr. J. STODDART BARR (Hobart) asked Dr. Eadie if he had had any experience in growing boys of vasomotor rhinitis, which might have some association with endocrine disturbance.

Dr. ARTHUR MURPHY (Brisbane) said that the application of this knowledge was a possible escape from the jibe that ear, nose and throat specialists were only surgeons. He thought that the paper represented a very clear insight on the part of Dr. Eadie into his patients' conditions and also represented an amount of close study. He asked whether there was a short cut to this knowledge without tedious reading of experiments in endocrinology.

Dr. H. M. JAY (Adelaide) said that they should try to relieve themselves from the glaring stigma that they could not see beyond their own specialty. They should try to be physicians as well. His hopes with regard to this paper were fulfilled by the close attention Dr. Eadie had given to the subject, and he looked forward to studying it further.

Dr. Eadie, in reply to Dr. Barr, said that there might be a condition of primary endocrine dysfunction producing vasomotor rhinitis.

Dr. Barr asked whether he had seen any patients treated by glandular therapy.

Dr. Eadie had not seen any patients treated in this way, but thought that the treatment might be helpful. It was known that extract of testis was not so beneficial as ovarian extract. He recommended "Recent Advances in Endocrinology" as a book full of information on the subject.

Endoscopy.

Dr. ATHOL BLAUBAUM (Melbourne) read a paper on endoscopy. He said that the first requisite for satisfactory work was the development of a good team. All instruments should be kept in perfect order, and this was possible only when the theatre staff was accustomed to handling them. It was well to have a duplicate set of instruments, so that one set could be sterilized while the other was in use. He said that at the Alfred Hospital most of the patients were ambulatory. Local anaesthesia was invariably employed, except for children and for very nervous adults and for those who had foreign bodies in the oesophagus, when manipulation under local anaesthesia would be painful. The patients received an injection of morphine one hour before endoscopy and were anaesthetized with a 10% solution of cocaine. After examination or treatment they were kept in hospital for two or three hours and then allowed to go home. Patients who came from the wards received more adequate premedication than those who were ambulatory. If the patient was very ill, nervous or excitable, premedication with "Sodium amylal" was used.

Dr. Blaubaum described the technique adopted and discussed the question of bronchiectasis. He said that they had been treating patients in the advanced stage of the condition by bronchoscopic aspiration, by swabbing with acriflavine solution, and by using occasional injections of lipiodol. They found that they could get rid of the odour and lessen the cough and sputum. The patients felt better and usually gained in weight. Patients received a course of six treatments, but improvement was not maintained and further treatment was generally required at a later date. They had previously thought that bronchiectasis was always associated with sinusitis, but had seen patients with bronchiectasis in whom no infection of the respiratory tract was present.

Endoscopy in connexion with the oesophagus could be classed under the one heading of oesophageal obstruction. Oesophagoscopy made accurate diagnosis possible. Dr. Blaubaum discussed oesophagoscopy for the removal of a foreign body, in the treatment of carcinoma of the oesophagus, in cardiospasm and in stricture of the oesophagus resulting from injury or the ingestion of caustics.

Dr. ARTHUR MURPHY (Brisbane) read a paper on endoscopy in infants and children. He said that in infants and children, though endoscopy was mechanically the

same procedure as in older subjects, it was in practice quite different. In the first place, the cooperation of the patient was impossible except in rare instances; secondly, local applications as the chief means of anaesthesia were impracticable; thirdly, oesophagoscopy was a comparatively severe procedure in young children; and lastly, the narrow calibre of the tubes used threw a severe strain on the accuracy of the operator's vision. He had almost invariably used general anaesthesia. When the patient was desperately ill he had sometimes managed very comfortably with paraldehyde, given *per rectum*, and "Tuto-cain" or, more recently, "Pantocain" applications locally.

Endoscopy was a procedure in which the words "look before you leap" should be engraved on the end of the tube. In oesophagoscopy, no matter how well the operator remembered the curves, constrictions, and the depths of the oesophagus, it was essential that he should feel that he had seen the whole of every part of the wall while the instrument was being passed down. The wall was composed of soft tissues capable of pronounced and variable change. Disease or injury altered not only its appearance, but also its disposition, and in consequence the only safe guide was one's eyesight very exactly used. In bronchoscopy the open lumen and more rigid walls offered a different view; but all the same, careful inspection was necessary. A careful scrutiny of the bifurcation from afar was often worth twice the time spent on close viewing, because it could reveal most of both bronchial entrances at the same time.

The uses of the bronchoscope and of the oesophagoscope were both very wide, and it should be their aim to convince other members of the medical profession that they had in their hands instruments with a sphere of application limited only by the full catalogue of diseases of the upper digestive and lower respiratory organs. Dr. Murphy then referred to the category of use for the bronchoscope as approved at the French Oto-Rhino-Laryngological Congress in 1931 and applied it to children.

The first indication was the presumption of the presence of a foreign body in the absence of other explanation of the symptoms. In this connexion he defined a foreign body as anything that interfered with the free entry and exit of air. The second use of the instrument was as a means for searching for a foreign body shown to be present on clinical or radiological evidence or both. In discussing this point, Dr. Murphy laid stress on the essential limits to the use of the bronchoscope and emphasized the value of working with a skilled clinician. The third indication was tracheal and bronchial stenosis. This, in Dr. Murphy's experience, was rare in children. Fourthly, the bronchoscope was held to be useful in haemoptysis of doubtful origin. This did not often occur in children. In non-acute broncho-pulmonary suppuration, not of tuberculous origin, there was a vast sphere of application, and Dr. Murphy held that the time was long overdue when patients with conditions of this kind should be handed over to the bronchoscopist as a matter of course. For upwards of five years he had seized every suitable opportunity to use the bronchoscope in these cases, and he stated definitely that bronchoscopic methods could and did cure bronchial suppuration.

The last three conditions mentioned by Dr. Murphy were pulmonary tuberculosis, of which he had not investigated a case with the bronchoscope, dyspnoea or cough of tracheo-bronchial origin, which might sometimes represent early stages of so-called dry bronchiectasis and which he had treated successfully, and asthma in children. He wondered whether further use of the bronchoscope might not open up another chapter in the treatment of asthma.

Dr. BRYAN FOSTER (Melbourne) thought the work most interesting and considered that it should be carefully planned and carried out and that an adequate theatre staff was most necessary. He thought that a preliminary X ray examination should be made as a routine measure. He cited a case of a man who met with a motor accident while wearing an artificial denture. This was broken into many pieces. The patient stated that he had swallowed some of the pieces. X ray examination showed a piece

in the œsophagus and also a piece in the left bronchus. He agreed with Dr. Murphy in stressing the likelihood of the presence of multiple foreign bodies. He once removed a halfpenny from the posterior cricoid region in a child. The symptoms persisted and on examination another halfpenny was found in the same position.

In regard to bronchiectasis, he had been disappointed in the results. He thought that any cavity that the tube would enter could drain itself. While treating soldiers during the war he had found that they avoided the position which made drainage possible, as they considered that it brought on further discharge. This method of draining by posture could be done daily, whereas bronchoscopy could be done only at longer intervals. At the Brompton Hospital they advocated lobectomy, but they considered that the patients should be treated early.

Dr. Foster felt hopeless about the treatment of carcinoma of the œsophagus. The attempts at radium treatment not having been successful, he doubted whether the gain achieved in prolongation of life for some months was worth the discomfort of the surgical procedures when there was so little hope of cure.

Dr. C. EADIE (Melbourne) was impressed with the improvement in treatment of bronchiectasis. He was not sure that he had given any great benefit by bronchoscopy and rather favoured postural treatment in the late cases. Patients in the early stages did better with bronchoscopy. Dr. Eadie had had a great number of patients whose bronchiectasis was associated with sinusitis. In his opinion good results were obtained by bronchoscopy in the treatment of lung abscesses.

Dr. G. A. D. McARTHUR (Melbourne), calling to mind pre-endoscopic days, remembered a chronic invalid who suffered for years from having inhaled a tooth during extraction under general anaesthesia. He asked Dr. Blaubaum's advice about a patient suffering from spasm of the crico-pharyngeus muscle. The patient had been affected by the spasms following air raids in London. She eventually became free of them, but was troubled again recently. An attack was brought on by the shock she received when a neighbour collapsed and died on her doorstep. Dysphagia had recurred and persisted. She was able to eat moderately well when alone, but in company had great difficulty. He wondered if dilatation would be of use, and if so, what form should be used. He remembered removing a large foreign body from a larynx. An artificial denture had been broken and a large piece lost. After a few weeks the patient began to grow hoarse. The missing piece was found between the cords. This rather emphasized the tolerance of the larynx to foreign bodies.

Dr. W. J. DENEHEY (Melbourne) congratulated Dr. Blaubaum on sending his patients home two hours after bronchoscopy. Dealing with the question of anaesthetics, he considered that since chloroform was necessary in some of these cases, its administration should be taught to students, as had been done in the past, but was not being done at present. He agreed with the idea of injecting the lipiodol in the X ray room before endoscopy was done.

Dr. H. M. JAY (Adelaide) was particularly interested in the large amount of clinical material at the disposal of Dr. Blaubaum and Dr. Murphy. They encouraged others to emulate them in forming a team of trained hospital assistants. He thought that they should refuse to be rushed into doing endoscopy without preliminary X ray examination.

Since many fish bones were not radio-opaque, he brought to the notice of the meeting a method which had been used for many years in Adelaide. Inquiries should be made of the patient as to what he had been eating. If the food was non-opaque, then the radiographer gave the patient a pledget of wool soaked with barium paste. This pledget would be held up by the foreign body, if present. Pseudo-bronchiectasis in syphilitic children was new to him. He agreed that cancer of the œsophagus was a deplorable condition to face. Its incidence was apparently

increasing. At present in the Adelaide Hospital, one in two hundred patients died from this complaint. Very few cures were known, but these should stimulate them to further efforts.

Dr. Blaubaum, in reply, said that an X ray examination should be made in most cases, but when the patient had just had a meal and was sure he had swallowed a foreign body, X ray examination was not always necessary. When several foreign bodies had been swallowed it was, of course, necessary.

In his paper he made no claim to cures of bronchiectasis, but in the persons treated there had been such a marked improvement, in general health and in sleep that he considered the treatment worth while. The patients themselves returned and asked for further treatment, as they felt benefited by it.

In regard to malignant disease, he disagreed with Dr. Foster. He thought that no harm was done by gastrostomy. Gastrostomy usually had to be done in the end, and the insertion of radium was very little trouble. It was necessary to do these things in working out some technique in treatment. The great majority of patients with bronchiectasis whom he saw had a primary infection of the upper respiratory tract, but he had seen several children without this primary condition.

In reply to Dr. McArthur, he said that he had seen the spasm occurring in neurotic women. Generally he found dilatation with a large bougie under general anaesthesia satisfactory treatment. As far as he knew, there had been no return of the condition. He had also noted that the larynx was tolerant to the presence of foreign bodies. He used chloroform only when ether was contraindicated, owing to inflammatory conditions in the lungs. At the Alfred Hospital in Melbourne chloroform, when used, was usually given by the honorary medical officer; resident medical officers did not receive training in the administration of chloroform. He had used the method of swallowing the pledget of cotton wool until in one case the patient was examined by the fluoroscope while swallowing it. The radiographer saw the pledget held up for a moment and then pass on. He reported that the foreign body had been carried on and that there was no need for further interference. The bone, however, had not been carried on and had to be removed at a later date.

Dr. Murphy, replying, said that in Brisbane he had not the facilities of workers in Melbourne, but there were several enthusiastic physicians and nurses who gave much help. The physicians there now recommended bronchial irrigation in early cases of bronchiectasis. He knew that he obtained few cures, but did give relief. The level of health was raised to one not previously known by the patient. The factor was removed, but the cough remained. Of syphilitic cases, unfortunately, only one had so far come to autopsy. In this instance the patient died of bronchopneumonia. Fourteen months previously the lipiodol had been injected and profuse pus had been seen exuding from both bronchi *post mortem*. There was no sign of bronchiectasis.

(To be continued.)

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